

REFERENCE

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- P.3 Do above; Report No. 10 - Recommendation on Administration and Organization Structure for Water Supply Development, 1973
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- P.23 OVP and MOF, Treasury Circular No. 6, Programme Review and Forward Budget for 1992/93 - 1994/95
- P.24 CBS, Statistical Abstract 1984 - 1990, May 1984 - May 1990
- P.25 H.J. McPherson and Others, Low Cost Appropriate Water and Sanitation Technologies for Kenya, September 1984
- P.26 Management and Law for Water Resources, Luis V. Cunha, etc., Water Resources Publications, USA, 1977

TABLES

Table P2.1 (1) Laws Related to Water Development and Their Main Ministries (1/2)

MINISTRY	LAWS	CHAPTER
MINISTRY OF WATER DEVELOPMENT	Water	372
	Mombasa Pipeline Board	373
MINISTRY OF REGIONAL DEVELOPMENT	Irrigation	347
	Fish Industry	378
	Government Fisheries Protection	379
	Lake Basin Development Authority	442
MINISTRY OF ENERGY	Electric Power	314
	Kerio Valley Development Authority (Budget Appropriated for Ministry of Energy)	441
	Tana and Athi Rivers Development Authority	443
MINISTRY OF AGRICULTURE	Agriculture	318
MINISTRY OF TRANSPORT AND COMMUNICATIONS	Territorial Waters	371
	Kenya Ports Authority	391
	Kenya Railways Corporation	397
	Lakes and Rivers	409
MINISTRY OF TOURISM AND WILDLIFE	Wildlife	376
MINISTRY OF PUBLIC WORKS	Ferries	410
MINISTRY OF ENVIRONMENT AND NATURAL RESOURCES	Mining	306
	Forest	385

Table P2.1 (2) Laws Related to Water Development and Their Main Ministries (2/2)

MINISTRY	LAW S	CHAPTER
MINISTRY OF HEALTH	Public Health	242
	Malaria Prevention	246
MINISTRY OF LAND, HOUSING AND PHYSICAL PLANNING	Housing	117
	Town Planning	134
	Survey	299
	Land Control	302
	Land Planning	303
MINISTRY OF LOCAL GOVERNMENT	Local Government	265
MINISTRY OF PLANNING AND NATIONAL DEVELOPMENT	Statistics	112
OFFICE OF THE PRESIDENT	State Corporation (*)	446

(*) Legal Notice No. 270: The National Water Conservation and Pipeline Corporation Order, 1988

Source: Laws in Kenya, Revised edition 1988 (as at 1st January 1988), published by the Government Printer

Note: Although not listed above, there are Rules, Regulations and By-laws associated with the Acts and other Acts such as the Electric Supply Lines Act (Cap. 315), Fish Industry Act (Cap. 378), Chiefs' Authority Act (Cap. 128), Pest Control Product Act (Cap. 346), etc. which are also indirectly related to the water development.

Table P3.1 (1) Summary of Water-related Development Activities by Ministry/Agency (1/2)

Ministry/Agency	Regional/ River Basin Development Plan	Resources Survey and Monitoring	Water Supply/ Sewerage	Agriculture/ Irrigation	Hydropower	Flood Control/ River Works	Livestock, Wildlife, Forestry & Fishery	Environmental & Watershed Management
M01 Office of the President	Co-ordination and policy analysis on development planning			Provision of grants and support to specific agricultural projects (M01-1 & 2)			Promotion/monitoring of afforestation programme (M01-3)	Soil Conservation monitoring (M01-3)
M06 Ministry of Planning and National Development	National development planning Co-ordination of District Development Plan	Statistical services (M06-1); Land use mapping/ remote sensing (M01-2)						
M09 Ministry of Reclamation and Development of Arid, Semi-Arid and Waterland			Water supply/ Sewerage for ASAL projects	Co-ordination of ASAL agricultural develop- ment			Co-ordination of developed schemes in ASAL areas	
M10 Ministry of Agriculture				Agricultural develop- ment (including ASAL projects) Irrigation projects				Soil conservation projects
M12 Ministry of Local Government			Local authorities water supply/ sewerage scheme (M12-1)					
M13 Ministry of Public Works					Electrical works for public facilities	Ferry facilities and operation Jetties and seawalls		
M14 Ministry of Transport and Communication		Meteorological observation (M14-1)	Water supply for railway use			Sea Transportation including port facilities		
M15 Ministry of Tourism and Wildlife			Water supply for wild- life conservation			Ferry and Jetty for wildlife areas	Wildlife conservation	
M19 Ministry of Livestock Development			Water supply/ sewerage for livestock development				Livestock development Rangeland management activities	
M18 Ministry of Culture and Social Services			Co-ordination for water supplies involved in community development schemes					
M20 Ministry of Water Development	National water resources plan (M20-1)	Hydrological observa- tion Water quality and pollution control Water use permit (M20-2)	Urban water supply/ sewerage (M20-1) Rural water supply (M20-1)	Advises on irrigation water uses Irrigation development in specific projects		Flood control and drainage Construction of dams (M20-1)		

Table P3.1 (2) Summary of Water-related Development Activities by Ministry/Agency (2/2)

Ministry/Agency	Regional/ River Basin Development Plan	Resources Survey and Monitoring	Water Supply/ Sewerage	Agriculture/ Irrigation	Hydropower	Flood Control/ River Works	Livestock, Wildlife, Forestry & Fishery	Environmental & Watershed Management
M21 Ministry of Environment and Natural Resources		Geological survey Mineral resources survey					Forestry development and afforestation	National environmental protection programme (M21-1)
M22 Ministry of Co-operative Development				Co-ordination for coffee/cotton projects undertaken by co-operatives				
M24 Ministry of Supplies and Marketing				Food supplies and management services Grain storage and handling				
M30 Ministry of Energy	National power development plan			Agriculture deve- lopment in Kerio Valley (M30-1)	Hydropower deve- lopment (M30-2 to 4)	Construction of dams for hydro- power (M30-1.2 & 4)	Development schemes in Kerio Valley (M30-1.1) Co-ordination for fuelwood agro- forestry	Catchment conser- vation in Kerio Valley (M30-1)
M35 Ministry of Research, Science and Technology				Agricultural research			Forestry research Fishery research	
M36 Ministry of Lands and Housing		Mapping and land survey (M36-1)	Water supply for settlement schemes					
M45 Ministry of Regional Development	River Basin study (M45-1 to 5)			Agriculture/ irrigation deve- lopment in 5 major basins (M45-1 to 5) Investigation develop- ment in specific projects (M45-6)		Flood control and other river works related to project in 5 major river basins (M45-1 to 5)	Development in 5 major river basins (M45-1 to 5) Fishery develop- ment	Catchment conservation in 5 major river basins (M45-1 to 5)

Related Agencies:

M01-1 : Agricultural Development Corporation	M30-1 : National Water Conservation and Pipeline Corporation (NACPC)	M45-1 : Tana and Athi Rivers Development Authority (TARDA)
-2 : Hydropower Development Corporation	-2 : Water Apportionment Board	-2 : Lake Basin Development Authority (LEBA)
-3 : Prefabrication Division on Soil Conservation	M21-1 : National Environmental Secretariat (NES)	-3 : Baso Basin Development Authority (BIDA)
M06-1 : Prefabrication (PCSA)	M30-1 : Kerio Valley Development Authority (KVDA)	-4 : Baso Nyiro South Basin Development Authority
-2 : Central Bureau of Statistics (CBS)	-2 : Kenya Power Company (KPC)	-5 : Coast Development Authority
M06-1 : Department of Resources Survey & Remote Sensing (DRSRS)	-3 : Kenya Power & Lighting Company (KPLC)	-6 : National Irrigation Board
M12-2 : Nairobi City Commission, City Councils and other local authorities	-4 : Tana River Development Company (TRDC)	
M14-1 : Meteorological Department	M06-1 : Survey of Kenya	

Table P3.2 (1) Roles and Functions of Ministries (1/9)
(Items relevant to Water Development)

Description	Function
M01. <u>OFFICE OF THE PRESIDENT</u>	
Departmental Function	<ul style="list-style-type: none"> – Coordination and policy analysis on development programmes – Provincial Administration (thru Provincial Commissioners) – District Administration (thru District commissioners) – District Development Services (thru District Development Officers) – Internal security
Agencies Attached:	
(1) Agricultural Development Corporation	– Provision of grants and other support for specific projects (e.g. Garissa farm, Ndalibi estate, Garama Ranch)
(2) Nyayo Tea Development Corporation	– Grants to Nyayo Tea Zone Development
(3) Presidential Commission on Soil Conservation and Afforestation	– Advices on and monitoring of various activities related to soil conservation and afforestation
M05. <u>MINISTRY OF HOME AFFAIRS AND NATIONAL HERITAGE</u>	
Departmental Function	– Conservation of cultural heritage and historical monuments/sites
National Council for Population and Development	<ul style="list-style-type: none"> – Planning and evaluation policy and monitoring for population – Country programme for population activities – Population development activities – Family planning services and support

Table P3.2 (2) Roles and Functions of Ministries (2/9)
(Items relevant to Water Development)

Description	Function
M06. <u>MINISTRY OF PLANNING AND NATIONAL DEVELOPMENT</u>	
Departmental Function	<ul style="list-style-type: none"> – National development planning – Rural planning (including preparation of District Development Plans) – Sectoral Planning – Macro-economic planning
Central Bureau of Statistics	<ul style="list-style-type: none"> – Statistical services – Population census – Fertility survey – National sample survey – Survey of employment
Department of Resources Survey and Remote Sensing	<ul style="list-style-type: none"> – District aerial surveys, land use mapping – Desertification assessment and mapping
M09. <u>MINISTRY OF RECLAMATION AND DEVELOPMENT OF ARID, SEMI-ARID AND WASTELAND</u>	
Departmental Function	<ul style="list-style-type: none"> – Coordination of ASAL development project
M10. <u>MINISTRY OF AGRICULTURE</u>	
Departmental Function	<ul style="list-style-type: none"> – Agricultural policy and services – Crop production – Land and farm development <ul style="list-style-type: none"> • Soil conservation project • Irrigation development – Integrated agricultural development – Agricultural education and extension services
Agencies Attached:	
(1) Kenya Sugar Authority	<ul style="list-style-type: none"> – Provision of professional services – Provision of grants to works
(2) Agricultural Finance Corporation	<ul style="list-style-type: none"> – Provision of agricultural/small holder/small scale farm credits

Table P3.2 (3) Roles and Functions of Ministries (3/9)
(Items relevant to Water Development)

Description	Function
M11. <u>MINISTRY OF HEALTH</u>	
Departmental Function	<ul style="list-style-type: none"> – Curative Health (hospitals) – Preventive medicine and promotive health – Health – Medical supplies coordination
M12. <u>MINISTRY OF LOCAL GOVERNMENT</u>	
Departmental Function	<ul style="list-style-type: none"> – Local Government policy – Local Authorities sewerage schemes (including municipal council schemes) – Local Authorities water supply schemes (including Nairobi and other municipal council schemes) – Local Authorities miscellaneous programmes (including Nairobi refuse collection, flood projection, etc.)
M13. <u>MINISTRY OF PUBLIC WORKS</u>	
Departmental Function	<ul style="list-style-type: none"> – Government buildings – Electrical works for public structures – Construction and maintenance of jetties and seawalls – Construction and maintenance of public roads – Material testings
M14. <u>MINISTRY OF TRANSPORT AND COMMUNICATIONS</u>	
Departmental Function	<ul style="list-style-type: none"> – Meteorological observations (Meteorological Department) – Administration of Civil Aviation (Directorate of Civil Aviation) – Administration of port facilities – Administration of railways – Road transport licensing and registration

Table P3.2 (4) Roles and Functions of Ministries (4/9)
(Items relevant to Water Development)

Description	Function
Agencies Attached:	
(1) Kenya Airways	– Air transportation services
(2) Kenya Railway Corporation	– Railway transport services (including water exploitation for railway use)
(3) Kenya Ports Authority	– Operation of port facilities including dredging works
 M16. <u>MINISTRY OF TOURISM AND WILDLIFE</u>	
Departmental Function	– Tourism development and promotion – Wildlife conservation and management
Agencies Attached:	
(1) Kenya Wildlife Service	– Wildlife conservation and management – Construction of water supplies for wildlife & national parks (also supplies water to neighbouring communities) – Construction of roads and bridges in national parks and home reserves
(2) Kenya Tourism Dev. Corporation	– Development of tourist hotels
(3) Kenya Utalii College etc.	– Training of tourism sector manpower
 M17. <u>MINISTRY OF LIVESTOCK DEVELOPMENT</u>	
Departmental Function	– Development of animal industry, production and marketing – Integrated livestock production including ASAL development projects – Construction of water supplies and sewerage related to livestock development projects – Rangeland development project and services, including construction of water supplies

Table P3.2 (5) Roles and Functions of Ministries (5/9)
(Items relevant to Water Development)

Description	Function
M18. <u>MINISTRY OF CULTURE AND SOCIAL SERVICES</u>	
Departmental Function	<ul style="list-style-type: none"> – Coordination for water supply works related to community development
M20. <u>MINISTRY OF WATER DEVELOPMENT</u>	
Departmental Function	<ul style="list-style-type: none"> – Water development and supplies – Rural water supplies – Self-help Water Supplies – Urban water supplies and sewerage – Water researches – Water quality and pollution control – Special water programmes <ul style="list-style-type: none"> • Surface water-ground water studies • Construction of dams • Integrated water development projects
Kenya Water Institute	<ul style="list-style-type: none"> – Training of water development staff
Water Apportionment Board	<ul style="list-style-type: none"> – Permit of water use
Agencies Attached:	
(1) National Water Conservation and Pipeline Corporation (NWCPC)	<ul style="list-style-type: none"> – Construction of dams (major projects) – Construction and maintenance of rural water supply (major projects) – Construction, operation and maintenance of urban water supply (major projects)

Table P3.2 (6) Roles and Functions of Ministries (6/9)
(Items relevant to Water Development)

Description	Function
M21. <u>MINISTRY OF ENVIRONMENT AND NATURAL RESOURCES</u>	
Departmental Function	<ul style="list-style-type: none"> – Forestry development <ul style="list-style-type: none"> • Forestry and plantation development • Local afforestation schemes • Rural afforestation extension scheme • Arid and semi-arid lands forestry development – Mineral survey and exploration – Geological survey (Mines and Geological Department)
National Environment Secretariat	<ul style="list-style-type: none"> – National environmental protection <ul style="list-style-type: none"> • Action plan to combat desertification • District assessment programme
M22. <u>MINISTRY OF CO-OPERATIVE DEVELOPMENT</u>	
Departmental Function	<ul style="list-style-type: none"> – Cooperative supervision and promotion services – Small holder coffee improvement projects (for cooperatives) – Cotton processing and marketing projects (for cooperatives)
Agencies Attached:	
(1) Kenya Planters Cooperative Union	<ul style="list-style-type: none"> – Training of cooperative staff – Cooperative management improvement
(2) Coffee Board of Kenya	
M28. <u>MINISTRY OF SUPPLIES AND MARKETING</u>	
Departmental Function	<ul style="list-style-type: none"> – Food supplies and management services – Construction of cashewnuts factory
Agencies Attached:	
National Cereals and Production Board	<ul style="list-style-type: none"> – Grain storage and handling, including construction of grain silos and stores

Table P3.2 (7) Roles and Functions of Ministries (7/9)
(Items relevant to Water Development)

Description	Function
M30. <u>MINISTRY OF ENERGY</u>	
Departmental Function	<ul style="list-style-type: none"> – Energy policy and development – Renewable energy development <ul style="list-style-type: none"> • Woodfuel resources development (Agroforestry centres) • Alternative energy technologies – Electric power development <ul style="list-style-type: none"> • National grid systems • Rural electrification • Hydropower development • Geothermal resources exploration • Thermal power development – Petroleum exploration
Agencies Attached:	
(1) Kerio Valley Development Authority	– Development projects (multi-sectors) in Kerio Valley basin
(2) Kenya Power Company	– Planning of power development
(3) Kenya Power and Lighting Company	– Construction and operation of power projects/facilities
(4) Tana River Development Company	– Power generation at hydropower plants (Kindaruma, Kamburu, Gitaru, Masinga) on Tana River
M32. <u>MINISTRY OF INDUSTRY</u>	
Departmental Function	<ul style="list-style-type: none"> – Industrial development and promotion – Provision of control guidelines for effluents and waste water from factories
Kenya Bureau of Standards	– Industrial standards

Table P3.2 (8) Roles and Functions of Ministries (8/9)
(Items relevant to Water Development)

Description	Function
M35. <u>MINISTRY OF RESEARCH, SCIENCE AND TECHNOLOGY</u>	
Departmental Function	<ul style="list-style-type: none"> – National research development policy – Marine and fisheries research – Forestry research – Agriculture and crop research
National Council for Science and Technology	<ul style="list-style-type: none"> – National research policy
Kenya Industrial Research	<ul style="list-style-type: none"> – Industrial research including power
Kenya Marine and Fisheries Research Institute	<ul style="list-style-type: none"> – Marine and Fishery research
Kenya Forestry Research Institute	<ul style="list-style-type: none"> – Forestry research – Agro-forestry and afforestation projects (experimental)
Kenya Agricultural Research Institute	<ul style="list-style-type: none"> – Soil water management research – Range and arid land research – Crop research – Animal production research
M36. <u>MINISTRY OF LANDS, HOUSING AND PHYSICAL PLANNING</u>	
Departmental Function	<ul style="list-style-type: none"> – Land registration and valuation – Administration of State and Trust lands – Settlement schemes – Land adjudication and consolidation – Physical planning and urban development plan
Survey of Kenya	<ul style="list-style-type: none"> – Mapping and land surveys
National Secretariat for Human Settlement	<ul style="list-style-type: none"> – Human settlement policy
Agencies Attached:	
National Housing Corporation	<ul style="list-style-type: none"> – Housing development

Table P3.2 (9) Roles and Functions of Ministries (9/9)
(Items relevant to Water Development)

Description	Function
M46. <u>MINISTRY OF REGIONAL DEVELOPMENT</u>	
Departmental Function	<ul style="list-style-type: none"> – Regional development policy – Turkana integrated development programmes (multi-sectors) – Fishery development – Irrigation development (Bura irrigation scheme)
Agencies Attached:	
(1) National Irrigation Board	– Major irrigation schemes
(2) Tana and Athi Rivers Development Authority (TARDA)	– Regional development of Tana and Athi river basins (irrigation, etc.)
(3) Lake Basin Development Authority (LBDA)	– Regional development of Lake Victoria basins (irrigation, flood/drainage, fishery, etc.)
(4) Ewaso Ngiro North Basin Development Authority	– Recently established
(5) Ewaso Ngiro South Basin Development Authority	– Recently established
(6) Coast Development Authority	– Proposed

Source: (1) Programme Review and Forward Budget 1990/91 - 1992/93
(2) Estimate of Recurrent Expenditure 1989/90
(3) Organization of the Government of Kenya, March 1988

Table P5.1 (1) List of International Drainage Basins (1/2)

International Drainage Basin	River Basin in Kenya	Basin No.	Drainage Area (km ²)						Total
			Kenya	Tanzania	Uganda	Sudan	Ethiopia	Somalia	
1. Malaba (Uganda)	Malaba	1AA-1AE (5)	1,060	-	7,960	-	-	-	9,020
2. Lake Victoria	Basin <u>Total</u>	(58)	25,800	110	110	-	-	-	26,020
	Sio	1AF-1AH (3)	(1,330)	-	(110)	-	-	-	
	Nzoia	1B-1E (23)	(12,710)	-	-	-	-	-	
	Yala	1F (8)	(3,270)	-	-	-	-	-	
	Nyando	1G (7)	(3,620)	-	-	-	-	-	
	Kibos, etc	1HA (1)	(869)	-	-	-	-	-	
	Mguruk, etc	1HB (1)	(762)	-	-	-	-	-	
	Ndate, etc	1HC (1)	(521)	-	-	-	-	-	
	Kibuon	1HD (1)	(778)	-	-	-	-	-	
	Awach	1HE (1)	(761)	-	-	-	-	-	
	Tende								
	Lambwe*	1HF (1)	(846)	-	-	-	-	-	
	Small rivers *	1HG (1)	(333)	-	-	-	-	-	
	Sondu)	1J (7)	(3,480)	-	-	-	-	-	
	Kuja	1K (3)	(6,920)	(110)	-	-	-	-	
3. Mara (Tanzania)	Mara	1L (5)	7,960	4,920	-	-	-	-	12,880
4. Grumeti (Tanzania)	Pololet *	1LA-3 (-)	160	11,440	-	-	-	-	11,600
5. Lake Natron (Tanzania)	Basin <u>Total</u>	(4)	11,600	11,800	-	-	-	-	23,400
	Olkeju								
	Lentrippe*	1LA-3 (-)	(680)	-	-	-	-	-	
	Ewaso	2K (3)	(8,720)	-	-	-	-	-	
	Ngiro								
	Torosei *	2H (1)	(2,200)	-	-	-	-	-	
	Tanzania Catch- ments *	-	-	(11,800)	-	-	-	-	
6. Lake Amboseli	Namanga*	3N (1)	3,170	1,800	-	-	-	-	4,970
7. Tsavo	Tsavo	3G (1)	6,300	560	-	-	-	-	6,860
8. Lake Jipe / Lake Chala	Lumi	3J (1)	1,360	1,360	-	-	-	-	2,720
9. Mzukune	Mzukune*	3J (-)	1,440	3,160	-	-	-	-	4,600
10. Uмба	Uмба	3K (1)	1,040	4,440	-	-	-	-	5,480
11. Lotikipi Plain (Closed basin)	Tarach *	2J (1)	26,300	-	2,040	8,600	200	-	37,140

Note: 1. Drainage area measured approximately on 1:1 million map wherein topographical information is not complete.
2. Figures in () show the number of sub-basins or the catchment area.
3. Marked "*" show the river basin which has no available runoff data.

Table P5.1 (2) List of International Drainage Basins (2/2)

International Drainage Basin	River Basin in Kenya	Basin No.	Drainage Area (km ²)						Total
			Kenya	Tanzania	Uganda	Sudan	Ethiopia	Somalia	
12. Lake Turkana (Closed basin)	Basin <u>Total</u>	(9)	59,180	-	3,080	250	78,680	-	141,190
	Turkana West *	2AB (1)	(9,850)	-	-	-	-	-	
	Turkwel	2B (4)	(20,440)	-	(3,080)	-	-	-	
	Lokichar	2CA (1)	(3,570)	-	-	-	-	-	
	Kerio *	2CB-2CC (2)	(13,820)	-	-	-	-	-	
	Turkana East *	2AA (1)	(8,540)	-	-	(250)	-	-	
	Omo Wenz	-	-	-	-	-	-	(78,680)	-
13. Lake Chew Bahir (Closed basin)	Small Lagas *	2AA (-)	2,960	-	-	-	19,300	-	22,260
14. Chalbi Desert (Closed basin)	Chalbi Desert *	5J (1)	29,260	-	-	-	12,880	-	42,140
15. Lach Dera (Somalia)	Basin <u>Total</u>	(23)	170,790	-	-	-	19,870	40,520	231,180
	Ewaso Ngiro	5A-5D 5EC-5ED 5FA (19)	(87,560)	-	-	-	-	-	
	Lagh Ghorgani*	5FB (1)	(8,170)	-	-	-	-	-	
	Lagh Bogar *	5EB (1)	(27,090)	-	-	-	(7,640)	-	
	Lagh Bor*	5EA (1)	(25,390)	-	-	-	(470)	-	
	Lagh Katulo *	5GA (1)	(22,580)	-	-	-	(11,760)	-	
	Somali Catch- ments *	-	-	-	-	-	-	(40,520)	
16. Jura (Somalia)	Daua	5H, 5GB (2)	10,160	-	-	-	144,000	111,500	265,660
17. Lac Genaneca (Somalia)	Lac Sara *	4JA (1)	8,490	-	-	-	-	16,400	24,890
18. Lac Buscbuse (Somalia)	Lac Garebey *	4JB (1)	3,690	-	-	-	-	3,200	6,890
Total (18 basins)		(114 sub- basins)	370,720	39,590	13,190	8,850	274,930	171,620	898,900

Note: 1. Drainage area measured approximately on 1:1 million map wherein topographical information is not complete.
2. Figures in () show the number of sub-basins or the catchment area.
3. Marked "*" show the river basin which has no available runoff data.

Table P5.2 Annual Mean Flow and Water Demand at Representative International Rivers

	River	River Mouth	Annual Mean Flow (cms) (1)	Demand in 2010 (cms)			Ratio (%) (2) / (1)
				Domestic & Industrial	Irrigation	Total (2)	
1	Malaba	Uganda	4.2	0.1	0.0	0.1	2.4
	Total (Uganda)		4.2	0.1	0.0	0.1	2.4
2	Sio	L. Victoria	11.4	0.2	0.1	0.3	2.6
3	Nzoia	L. Victoria	126.7	5.5	12.3	17.8	14.0
4	Yala	L. Victoria	39.5	0.4	10.1	10.5	26.6
5	Nyando	L. Victoria	23.6	0.7	3.3	4.0	16.9
6	Kibos	L. Victoria	10.9	1.0	0.2	1.2	11.0
7	Awach Seme	L. Victoria	8.5	0.5	0.1	0.6	7.1
8	Awach Kibuon	L. Victoria	9.7	0.3	1.7	2.0	20.6
9	Sondu	L. Victoria	56.7	3.0	17.3	20.3	35.8
10	Kuja	L. Victoria	57.7	1.1	0.7	1.8	3.1
	Total (L. Victoria) (cms)		344.7	12.7	45.8	58.5	17.0
11	Mara	Tanzania	59.3	0.1	0.1	0.2	0.3
12	Ewaso Ng'iro	Tanzania	15.2	0.2	6.5	6.7	44.1
	Total (Tanzania) (cms)		74.5	0.3	6.6	6.9	9.3
	TOTAL (cms)		423.4	13.1	52.4	65.5	15.5

Table P6.1 Central Government Out-turn of Revenue and Expenditure : 1986/87-1990/91

(Unit K.Pound Million)

Item	1986 /87	1987 /88	1988 /89	*1 1989 /90	*1 1990 /91	Increase 86/87 to 90/91 (%)
1. Overall Balance						
1) Current Revenue	1,389.61	1,618.45	1,918.55	2,087.61	2,458.58	76.9
a) Direct Taxes	385.73	454.48	512.02	599.15	710.00	84.1
- Income tax	385.73	454.48	512.02	599.15	710.00	84.1
- Other	-	-	-	-	-	-
b) Indirect Taxes	854.99	998.85	1,132.45	1,231.48	1,387.92	62.3
c) Other Revenue & Income	148.89	165.12	274.08	256.98	360.66	142.2
- Compulsory fees, etc.	22.02	26.68	40.47	36.01	41.53	88.6
- Income from property	60.54	69.55	94.87	100.41	185.90	207.1
- Current transfers	15.32	8.27	12.91	12.39	5.32	-65.3
- Sales of goods & services	43.42	51.05	76.52	81.77	83.25	91.7
- Others	7.59	9.57	49.31	26.40	44.66	488.4
2) Total Expenditure	1,889.74	2,042.24	2,447.90	2,700.36	3,327.10	76.1
a) Current Expenditure	1,517.21	1,731.02	1,967.24	2,154.60	2,690.81	77.4
- Expend. on Goods & Services	812.77	937.31	1067.75	1138.75	1457.30	79.3
Labour cost	398.42	453.59	541.48	555.41	622.50	56.2
Other goods & Services	414.35	483.72	526.27	583.34	834.80	101.5
- Subsidies*2	26.50	28.96	31.10	46.20	62.17	134.6
- Interest	300.21	370.35	463.42	500.22	606.80	102.1
Foreign	102.04	120.85	156.55	160.89	231.60	127.0
Domestic	198.17	249.50	306.87	339.33	375.20	89.3
- Transfer to Other Organization	377.72	394.39	404.75	468.77	564.54	49.5
- Others	0.01	0.01	0.22	0.66	0.00	-
b) Capital Expenditure	324.58	281.90	418.94	481.65	595.21	83.4
- Gross Fixed Capital Formation	283.72	242.00	374.46	446.86	557.38	96.5
- Capital Transfers	40.86	39.90	44.48	34.79	37.83	-7.4
c) Net Lending	47.95	29.32	61.72	64.11	41.08	-14.3
3) External Grants	62.80	159.40	186.65	217.25	425.50	577.5
4) Overall Deficit	-437.33	-264.39	-342.70	-395.50	-443.02	1.3
2. Financing of Deficit						
External Loans (Net)	1.45	71.45	200.00	301.20	268.10	18,389.7
Total Domestic Borrowing	406.35	225.85	88.00	68.70	88.00	-78.3
Long-term(net)	156.35	220.80	119.10	100.45	63.20	-59.6
Short-term(net)	250.00	5.05	-31.10	-31.75	24.80	-90.1
Total of Finance	407.80	297.30	288.00	369.90	356.10	-12.7
3. Changes in Cash Balance	-29.53	32.91	-54.70	-25.60	-86.92	194.3
Memorandum Items						
Public Debt Redemption	192.39	180.20	502.83	453.34	659.00	242.5
External	156.27	163.00	212.27	212.15	342.20	119.0
Internal	36.12	17.20	290.56	241.19	316.80	777.1

Source : P.17

Remark : *1 Provisional

*2 Include export compensation.

Table P6.2 Local Government Balance of Revenue and Expenditure : 1986/87-1990/91

(Unit K.Pound Million)

Item	1986 /87	1987 /88	1988 /89	*1 1989 /90	*1 1990 /91	Increase 86/87 to 90/91 (%)
1. Total Revenue	107.17	117.98	160.88	228.53	302.08	181.9
1) Current Revenue	74.96	96.86	144.27	158.87	179.89	140.0
a) Direct Taxes (Rates*2)	23.69	28.58	35.38	34.23	38.35	61.9
b) Indirect Taxes (Licences, etc.)	11.75	10.95	11.36	10.48	14.92	27.0
c) Other Revenue & Income	39.52	57.33	97.53	114.16	126.62	220.4
- Income from property	7.83	5.13	8.72	6.28	3.84	-51.0
- Current transfers	1.19	0.83	1.13	1.05	0.60	-49.6
- Sales of goods & services	30.50	51.37	87.68	106.83	122.18 *3	300.6
2) Capital Revenue	32.21	21.12	16.61	69.66	122.19	279.4
a) Loans Raised	31.96	20.96	15.69	69.54	121.21	279.3
b) Loan Repayment	0.25	0.16	0.92	0.12	0.98	292.0
2. Total Expenditure	125.17	139.15	146.47	248.26	331.83	165.1
1) Current Expenditure	75.68	87.02	93.21	118.59	138.51	83.0
a) Expend. on Goods & Services	70.19	81.46	91.03	112.54	135.70	93.3
- Labour cost	39.57	48.60	57.15	66.53	75.29	90.3
- Other goods & Services	30.62	32.86	33.88	46.01	60.41	97.3
b) Transfer to						
households and enterprises	1.50	0.62	1.86	1.31	1.32	-12.0
c) Funds (Current) Interest	3.99	4.94	0.32	4.74	1.49	-62.7
2) Capital Expenditure	49.49	52.13	53.26	129.67	193.32	290.6
a) Gross Fixed Capital Formation	34.72	36.35	35.29	110.53	180.34	419.4
b) Loan Repayment	12.80	15.42	17.43	18.21	12.92	0.9
c) Transferto Funds (Capital)	1.97	0.36	0.54	0.93	0.06	-97.0
- Composition by Local Authority	125.17	139.15	146.47	248.26	331.83	165.1
a) Nairobi City Commission	57.16	73.41	72.02	99.72	168.17	194.2
b) Municipal Councils	48.73	43.72	49.26	107.28	103.28	111.9
c) Other Councils	19.28	22.02	25.19	41.26	60.38	213.2
- Composition of Expenditure on Main Services by Nairobi and Municipal Councils						
a) Community Services	21.46	19.48	21.34	50.07	67.11	212.7
b) Social Services	17.04	19.54	22.52	28.99	26.19	53.7
c) Economic Services	50.64	55.75	50.11	87.46	141.62	179.7
- Water Undertakings	18.94	24.90	20.05	38.07	97.54	415.0
- Housing Estates	23.26	18.82	15.86	33.36	29.12	25.2
- General Administration	4.51	4.32	2.40	5.42	3.35	-25.7
- Others	3.93	7.71	11.80	10.61	11.61	195.4
3. Changes in Cash Balance	-18.00	-21.17	14.41	-19.73	-29.75	-
1) Current Account	-0.72	9.84	51.06	40.28	41.38	-
2) Capital Account	-17.28	-31.01	-36.65	-60.01	-71.13	-

Source : P.17

Remark : *1 Provisional

*2 Paid by households and enterprises.

*3 Including service charge.

Table P6.3 Approved Public Expenditure of Central Government : 1979/80-1989/90

(Unit:K.Pound Million)

Fiscal Year	Total Expenditure			Recurrent Expenditure			Development Expenditure		
	Net Expen- diture	External Funding	Total Expen- diture	Net Expen- diture	External Funding	Total Expen- diture	Net Expen- diture	External Funding	Total Expen- diture
1979/80	674.5	107.2	781.7	488.3	43.2	531.5	186.2	64.0	250.2
1980/81	860.1	92.6	952.7	616.4	32.6	649.0	243.8	60.0	303.7
1981/82	1,006.4	116.2	1,122.6	720.2	77.9	798.1	286.1	38.4	324.5
1982/83	1,138.3	173.5	1,311.8	868.2	86.9	955.1	270.1	86.6	356.7
1983/84	1,156.4	174.1	1,330.5	953.9	76.3	1,030.1	202.5	97.8	300.3
1984/85	1,268.2	293.9	1,562.1	1,067.0	58.7	1,125.6	201.3	235.2	436.5
1985/86	1,466.9	164.2	1,631.2	1,171.7	49.7	1,221.4	295.3	114.5	409.8
1986/87	1,845.0	274.0	2,119.1	1,509.6	72.0	1,581.6	335.4	202.0	537.5
1987/88	2,061.5	444.9	2,506.4	1,726.3	156.4	1,882.6	335.2	288.6	623.8
1988/89	2,600.8	522.4	3,123.3	2,208.4	108.7	2,317.1	392.4	413.8	806.1
1989/90	2,810.3	712.4	3,522.7	2,352.7	163.6	2,516.2	457.7	548.9	1,006.5

Source : P.20 and P.21

Table P6.4 Central Government Expenditure Account on Main Services : 1986/87-1990/91

(Unit : K.Pound Million)

Expenditure Item	1986/87			1987/88			1988/89			1989/90			1990/91		
	Recur- rent	Deve- lopment	Total	Recur- rent	Deve- lopment	Total	Recur- rent	Deve- lopment	Total	Recur- rent	Deve- lopment	Total	Recur- rent	Deve- lopment	Total
General Public Administration															
General Administration	84.7	110.4	195.1	94.4	62.9	157.3	121.4	91.1	212.5	116.5	139.3	255.7	149.7	170.9	320.7
External Affairs	27.4	1.0	28.4	29.0	1.0	30.0	34.1	3.2	37.3	42.7	3.2	45.9	36.6	1.4	38.0
Public Order and Safety	82.4	13.8	96.1	107.7	11.8	119.6	134.2	11.6	145.7	146.1	16.2	162.3	158.1	23.7	181.8
Defence	144.0	22.8	166.8	218.0	26.4	244.3	171.3	29.8	201.1	243.9	25.4	269.3	271.4	28.8	300.2
Education	371.1	25.5	396.5	431.0	25.7	456.6	478.0	55.1	533.1	522.5	41.8	564.3	606.5	96.0	702.5
Health	95.5	14.7	110.3	104.0	14.0	117.9	117.5	21.5	139.0	119.1	24.8	143.9	133.1	54.0	187.1
Housing & Community Welfare	2.0	11.2	13.2	2.6	4.1	6.6	4.2	16.7	20.9	3.2	9.6	12.8	4.7	11.5	16.1
Social Welfare	30.9	53.1	83.9	36.7	50.9	87.7	37.0	36.0	73.0	38.4	30.8	69.2	43.1	63.1	106.2
Sub-total	837.9	252.3	1,090.3	1,023.3	196.8	1,220.0	1,097.7	264.9	1,362.6	1,232.3	291.1	1,523.4	1,403.2	449.4	1,852.6
Economic Services															
General Administration	12.3	12.3	24.6	21.2	59.6	80.8	21.0	83.1	104.1	39.1	106.6	145.6	25.9	117.1	143.0
Agriculture, Forestry & Fishing	132.7	101.7	234.4	78.5	69.1	147.6	82.7	92.2	174.9	96.1	72.8	168.9	92.1	172.1	264.2
Mining, Manufacturing & Construction	36.6	6.4	43.1	36.0	5.8	41.8	39.2	35.1	74.3	42.4	44.4	86.8	39.7	55.5	95.2
Electricity, Gas & Water	21.4	40.7	62.1	21.2	28.9	50.1	24.3	54.5	78.8	23.5	71.2	94.7	24.3	64.7	89.0
Road	10.6	39.9	50.5	8.5	43.0	51.4	10.1	96.6	106.7	11.4	59.6	71.0	12.6	100.3	112.9
Transport & Communications	9.3	6.5	15.8	9.5	4.1	13.6	10.5	2.2	12.7	11.9	7.3	19.2	13.0	27.9	40.9
Other Economic Services	49.0	2.3	51.3	39.8	1.4	41.2	52.5	1.9	54.4	50.5	4.6	55.2	66.7	7.7	74.4
Sub-total	271.9	209.9	481.8	214.7	211.9	426.6	240.3	365.5	605.8	274.9	366.5	641.3	274.2	545.3	819.5
Other Services including Public Debt	516.5	0.0	516.5	581.0	0.0	581.0	998.3	0.0	998.3	991.8	0.0	991.8	1,324.6	0.0	1,324.6
Total	1,626.3	462.2	2,088.5	1,818.9	408.6	2,227.5	2,336.3	630.4	2,966.7	2,499.0	657.5	3,156.5	3,002.0	994.6	3,996.6

Source : P.17 and P.18

Table P6.5 Approved Development Expenditure by Ministry : 1986/87-1990/91

(Unit K.Pound Million)

Code Ministry	1986/87			1987/88			1988/89			1989/90			1990/91		
	Gross	A-in-A*1	Net	Gross	A-in-A	Net	Gross	A-in-A	Net	Gross	A-in-A	Net	Gross	A-in-A	Net
D1 OP	21.4	1.3	20.1	30.8	7.6	23.2	62.4	11.1	51.3	57.4	9.1	48.3	84.5	9.7	74.8
D2 SH	0.3	0.0	0.27	0.7	0.0	0.7	1.3	0.0	1.3	1.4	0.0	1.4	2.0	0.0	2.0
D3 DoPM	1.8	0.0	1.8	1.5	0.0	1.5	4.6	4.0	0.7	8.0	7.2	0.7	9.7	8.0	1.7
D4 MoFAIC	2.0	0.0	2.0	1.4	0.0	1.4	1.0	0.1	0.9	2.3	0.2	2.1	3.0	0.4	2.7
D5 MoHAND	3.8	0.0	3.8	4.4	0.5	3.9	5.5	1.2	4.3	7.8	2.2	5.6	13.5	5.9	7.6
D6 MoPND	8.6	6.0	2.6	13.7	8.9	4.9	26.0	10.3	15.7	17.2	9.4	7.8	25.0	13.4	11.6
D7 OoVP&MoF	12.9	0.0	12.9	11.5	0.2	11.3	45.1	33.8	11.3	32.4	16.7	15.7	73.3	23.1	50.2
D8 DoD	14.0	0.0	14.0	23.0	0.0	23.0	27.4	0.0	27.4	29.8	0.0	29.8	27.5	0.0	27.5
D9 MoRDASAW	-	-	-	-	-	-	-	-	-	2.6	2.3	0.3	2.0	1.8	0.2
D10 MoA	77.9	19.8	58.1	81.1	19.7	61.4	40.6	20.5	20.1	31.3	14.5	16.8	29.7	15.8	13.9
D11 MoH	18.4	2.2	16.2	24.5	8.9	15.6	38.1	22.7	15.4	45.8	28.8	17.0	53.6	33.4	20.2
D12 MoLG	9.6	2.6	7.0	9.2	3.7	5.6	10.0	5.8	4.2	21.2	11.6	9.6	33.4	27.9	5.4
D13 MoPW	12.5	6.8	5.6	12.7	6.6	6.1	65.4	23.1	42.3	124.1	65.9	58.1	113.7	61.7	51.9
D14 MoTC	78.5	27.0	51.5	65.9	19.2	46.7	16.4	10.9	5.4	50.0	32.7	17.3	49.7	20.2	29.5
D15 MoL	1.4	0.5	1.0	0.8	0.2	0.6	0.0	0.0	0.0	0.1	0.0	0.1	0.3	0.1	0.2
D16 MoTW	3.7	0.7	3.0	3.6	0.8	2.8	1.1	0.4	0.7	1.9	1.3	0.6	3.8	1.4	2.4
D17 MoLD	*2			18.8	2.2	16.6	12.6	5.3	7.4	20.0	12.9	7.1	28.1	22.2	6.0
D18 MoCSD	13.0	4.6	8.4	22.1	2.7	19.4	12.2	2.8	9.4	4.3	1.3	3.0	6.9	3.5	3.4
D19 MoIB	2.6	0.3	2.3	7.6	0.3	7.4	5.0	0.0	5.0	3.8	0.3	3.6	2.5	0.0	2.4
D20 MoWD	35.6	12.8	22.7	41.1	14.8	26.3	38.1	20.8	17.3	57.7	40.3	17.4	75.2	47.6	27.7
D21 MoENR	14.6	1.3	13.3	19.5	4.7	14.8	20.6	4.9	15.7	22.6	3.8	18.8	24.0	4.1	19.9
D22 MoCD	7.3	5.6	1.7	6.1	3.2	2.9	6.7	4.5	2.2	4.9	3.3	1.5	4.8	3.7	1.1
D23 MoC	5.2	0.3	4.9	5.8	0.4	5.4	1.2	0.2	1.0	1.0	0.2	0.8	1.4	0.6	0.7
D24 MoSM	-	-	-	-	-	-	41.0	15.0	26.0	36.1	14.6	21.5	43.7	32.5	11.2
D25 OoAG	0.1	0.0	0.1	0.1	0.0	0.1	0.3	0.0	0.3	0.5	0.0	0.5	0.8	0.0	0.8
D26 JD	0.5	0.0	0.5	0.4	0.0	0.4	0.5	0.0	0.5	0.6	0.0	0.6	0.6	0.0	0.6
D30 MoE	43.8	20.5	23.3	103.2	89.8	13.4	69.9	68.2	1.7	83.0	78.8	4.2	145.8	142.2	3.5
D31 MoEd	17.2	1.9	15.4	24.1	7.1	17.0	31.7	6.6	25.1	64.8	13.4	51.3	75.6	26.8	48.8
D32 MoI	*3			*3			2.8	1.1	1.7	5.3	2.1	3.1	5.9	3.2	2.8
D33 MoTT	-	-	-	-	-	-	6.9	3.4	3.5	11.1	6.7	4.4	8.9	6.7	2.2
D34 MoMDE	-	-	-	-	-	-	0.6	0.1	0.5	0.4	0.1	0.3	0.7	0.4	0.3
D35 MoRST	*4			*4			8.5	3.8	4.7	15.7	9.9	5.8	29.6	21.5	8.1
D36 MoLH	3.2	0.4	2.8	3.8	0.6	3.1	10.9	4.0	6.9	30.3	19.7	10.6	16.2	5.6	10.7
D45 MoNGPA	-	-	-	-	-	-	0.6	0.0	0.6	-	-	-	-	-	-
D40 MoRD	*5			*5			8.7	4.0	4.7	10.8	4.3	6.5	11.2	5.6	5.7
Total	406.6	114.1	292.5	533.7	202.0	335.4	623.8	288.6	335.2	806.1	413.8	392.3	1,006.5	548.9	457.7

Source : P.17

Remark : *1 A-in-A stands for "Appropriations in Aid".

*2 Included in Ministry of Agriculture (D10).

*3 Included in Ministry of Commerce (D23).

*4 Included in Ministry of Education (D31).

*5 Included in Ministry of Energy (D30).

Table P6.6 Trend of External Funding : 1986/87-1990/91

(Unit : K.Pound Million)

Name of Donor	1986/87			1987/88			1988/89			1989/90			1990/91		
	Loan	Grant	Total	Loan	Grant	Total	Loan	Grant	Total	Loan	Grant	Total	Loan	Grant	Total
Multi-lateral Donors															
ADB	10.4	0.0	10.4	3.5	0.0	3.5	3.3	0.0	3.3	10.4	0.0	10.4	3.0	0.0	3.0
ADF	3.0	0.0	3.0	0.2	0.0	0.2	2.6	0.0	2.6	5.8	0.0	5.8	12.3	0.0	12.3
EDF/EEC	1.9	3.3	5.2	1.4	25.2	26.6	7.1	28.1	35.2	20.8	34.9	55.7	2.9	60.6	63.5
IBRD	8.8	0.0	8.8	1.7	0.0	1.7	0.7	0.0	0.7	4.1	0.0	4.1	1.8	0.0	1.8
IDA	10.7	0.0	10.7	10.9	0.0	10.9	31.5	0.0	31.5	76.9	0.0	76.9	57.9	0.0	57.9
IFAD	0.6	0.1	0.7	0.0	0.2	0.2	0.0	0.4	0.4	3.3	0.3	3.6	0.8	0.2	1.0
OPEC	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	3.5	0.0	3.5	1.0	0.0	1.0
UNDP	0.0	1.0	1.0	0.0	3.4	3.4	0.0	8.9	8.9	0.0	18.8	18.8	0.0	9.4	9.4
UNEFP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	0.0	2.1	2.1	0.0	3.3	3.3
UNESCO	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	1.9	1.9	0.9	1.8	2.7
UNICEF	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.5	0.5	0.0	2.0	2.0	0.0	1.2	1.2
UNIDO	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	2.9
WFP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	2.7	0.0	8.9	8.9
Others	1.8	0.3	2.0	2.1	0.1	2.2	1.1	0.1	1.2	1.7	1.1	2.8	0.0	0.5	0.5
Total	37.1	5.0	42.2	19.8	29.1	49.0	47.3	39.2	86.5	126.4	64.0	190.4	80.5	88.6	169.1
Bi-lateral Donors															
Canada	0.0	14.4	14.4	0.0	14.9	14.9	0.0	9.8	9.8	0.7	10.7	11.4	1.6	10.1	11.7
China	2.5	0.0	2.5	2.0	0.0	2.0	0.1	0.0	0.1	2.0	0.0	2.0	10.0	0.6	10.6
Denmark	2.0	4.1	6.1	1.3	9.1	10.4	1.9	17.6	19.5	2.5	34.1	36.5	2.3	20.1	22.4
Finland	0.0	7.4	7.4	0.0	15.3	15.3	0.0	16.6	16.6	0.0	21.0	21.0	0.0	24.3	24.3
France	54.8	0.0	54.8	47.7	0.0	47.7	57.8	0.0	57.8	72.5	0.8	73.3	70.9	1.8	72.7
Italy	0.4	6.6	7.0	3.3	15.5	18.7	13.1	15.0	28.1	14.4	11.0	25.4	4.7	7.1	11.9
Japan	6.9	3.0	9.9	7.3	4.9	12.2	12.1	21.6	33.7	25.1	27.3	52.5	35.9	22.2	58.2
Netherlands	0.0	1.7	1.7	0.0	6.1	6.1	0.0	12.1	12.1	0.0	10.4	10.4	0.0	10.4	10.4
Norway	0.0	6.3	6.3	0.0	9.0	9.0	0.0	10.6	10.6	0.0	12.2	12.2	0.0	12.6	12.6
Sweden	3.3	7.4	10.7	0.7	13.2	13.9	1.0	17.0	18.0	2.0	15.9	17.9	0.0	10.3	10.3
United Kingdom	2.3	5.9	8.2	2.5	20.7	23.2	2.0	36.1	38.1	1.0	17.1	18.1	0.0	21.6	21.6
USA	3.2	4.1	7.4	32.8	11.7	44.5	3.5	15.0	18.5	1.7	19.9	21.6	1.7	21.1	22.8
West Germany	5.0	1.7	6.8	9.2	5.8	15.0	13.4	13.1	26.6	17.3	13.6	30.9	12.5	29.9	42.3
Others	7.3	2.2	9.5	2.5	4.2	6.7	4.0	10.3	14.3	8.8	10.0	18.8	8.0	6.0	14.0
Total	87.8	64.8	152.6	109.2	130.3	239.5	108.9	194.9	303.8	148.0	203.9	351.9	147.6	198.2	345.8
Grand Total	124.9	69.8	194.7	129.0	159.5	288.5	156.2	234.1	390.3	274.4	267.9	542.3	228.1	286.8	514.9

Source : P.21

Table P6.7 Annual Budget Allocation for Water Development and Its Deflated Accumulation : 1981/82-1992/93

(Unit: Current Kenya Pound '000)

Head Sub- Title Head	1981/82 App.	1982/83 App.	1983/84 App.	1984/85 App.	1985/86 App.	1986/87 App.	1987/88 App.	1988/89 App.	1989/90 App.	1990/91 Esti.	1991/92 Forw.	1992/93 Forw.	Total Deflated at '91 Prices	Share (%)
201 Water Development														
886 Headquarters and Professional Services	970	1,360	25	50	45	4,840	1,442	11	64	14	15	20	14,137	0.7%
887 Provincial Water Services			860	1,000	324	395	148	86	67	1	60	60	4,849	0.3%
202 Training of Water Development Staff														
899 Kenya Water Institute	360	765	350	270	140	599	310	868	371	430	1,083	408	8,383	0.4%
203 Rural Water Supply	9,691	11,182											46,865	2.5%
511 Departmental, Headquarters Centralized Services			955	185	550	1,215	5,416	1,456	786	536	350	355	15,381	0.8%
523 Feasibility Studies, Planning and Design			1,974	1,017	875	769	1,208	3,943	1,292	1,065	1,399	1,385	19,369	1.0%
524 Construction of Water Supply			7,665	7,326	9,533	12,505	13,449	26,764	11,907	15,456	31,372	33,507	200,711	10.6%
525 Feasibility Studies & Design-Misc. Small Schemes			678	254	574	701	346	290	136	147	275	355	5,300	0.3%
204 Self Help Water Supply	5,199	5,015											23,109	1.2%
528 Departmental, Headquarters Centralized Services			105	116	119	180	663	133	115	110	150	169	2,377	0.1%
527 Feasibility Studies, Planning and Design			286	71	376	306	65	56	47				1,872	0.1%
561 Construction of Water Supply			4,750	4,982	6,936	3,542	635	578	242				34,603	1.8%
205 Urban Water Supply	11,880	7,851											45,348	2.4%
560 Construction of Urban Water Supply			4,191	7,234	10,571	9,986	6,897	15,275	3,191	4,333	4,198	5,254	93,884	5.0%
562 Feasibility Studies, Planning and Design			813	1,451	842	1,942	1,297	545	36	58	55	35	10,427	0.6%
563 Construction of Sewerage			58	17	19	70	60	23	17	30	30	33	483	0.0%
895 Sewerage Planning and Design			98	55	23	48	140	3	24				592	0.0%
206 Special Water Programme	4,828	5,911											24,051	1.3%
893 Water Resources-Grand Water			1,275	731	800	1,153	898	2,316	8,283	2,999	2,132	4,807	29,318	1.6%
896 Water Conservation and Dam Construction			1,090	1,564	883	1,678	1,825	2,924	709	728	1,235	1,335	18,200	1.0%
897 Miscellaneous Programme			585	425	235	207	1,497	1,163	391	200	590	610	7,579	0.4%
928 Integrated Water Development Project			1,625	2,244	2,749	978	1,839	1,314	1,665	2,385	2,605	2,665	25,692	1.4%
Livestock Water Programme			1,000	628									2,997	0.2%
207 Water Conservation and Pipeline Corporation														
935 Water Professional Services									7,279	7,047	9,505	7,556	32,008	1.7%
936 Construction of Rural Water Supply									24,422	9,680	6,213	7,855	50,255	2.7%
937 Construction of Urban Water Supply									14,191	16,910	16,172	16,615	65,100	3.5%
Total of HOND	32,928	32,084	28,383	29,620	35,594	41,114	38,135	57,748	75,235	62,129	77,439	83,024	782,889	41.5%
103 Land and Farm Development														
250 Irrigation Development	930	1,847	1,495	1,408	7,946	6,588	3,438	4,452	6,075	3,730	6,507	6,612	65,532	3.5%
125 Development Schemes														
364 Local Authorities Sewerage Schemes	3,230	1,430	1,173	2,200	2,200	3,076	3,450	2,785	8,087	12,663	12,090	17,200	82,765	4.4%
365 Local Authorities Water Supply Schemes	5,265	2,944	1,270	1,756	4,106	2,232	2,038	9,626	11,730	15,910	28,111	27,950	132,265	7.0%
302 Electrical Power Development														
459 Hydro-Power Development	913	1,000					57,715	56,208	109,324	59,611	46,656	34,576	403,077	21.4%
304 Regional Development														
455 Kerio Valley Development Authority	420	1,500	945	870	2,320	53,895	1,543	5,181	4,859	3,799	20	30	103,714	5.5%
461 Regional Development														
707 Tana & Athi River Development Authority	7,122	620	10,744	35,019	17,813	30,472	575	2,083	305	4,936	8,731	11,868	195,496	10.4%
715 Lake Basin Development Authority	420	1,253	523	1,050	1,710	1,594	2,299	5,325	4,713	6,324	4,923	4,363	41,069	2.2%
716 Ewaso Nyiro North Basin Development Authority											50	60	110	0.0%
717 Ewaso Nyiro South Basin Development Authority									3	20	50	50	123	0.0%
463 Irrigation Development														
757 National Irrigation Board	9,039	3,347	887	9,930	626	780	648	730	3,423	8,640	5,000	1,600	69,670	3.7%
758 Bura Irrigation Scheme							2,666	1,933	1,628	2,225			9,644	0.5%
Total Budget for Water Development	60,267	46,025	45,420	81,853	72,315	139,751	112,507	146,071	225,382	179,987	189,577	187,333	1,886,354	100.0%
Share of HOND	54.6%	69.7%	62.5%	36.2%	49.2%	29.4%	33.9%	39.5%	33.4%	34.5%	40.8%	44.3%	41.5%	-
Total of Gross Development Expenditure	324,480	356,692	300,343	436,472	409,798	537,478	623,807	806,144	1,006,545	-	-	-	-	-
Share of HOND	10.1%	9.0%	9.5%	6.8%	8.7%	7.6%	6.1%	7.2%	7.5%	-	-	-	-	-
Share of Water Development Total	18.6%	12.9%	15.1%	18.8%	17.6%	26.0%	18.0%	18.1%	22.4%	-	-	-	-	-
Price Index (Civil Engineering Index 1972=100)	306	363	380	460	500	534	592	636	690	749	749	749	-	-

Source : P.20, P.21 and P.22

Table P6.8 External Funding for Water Related Projects by Donor and by Ministry : 1990/91

(Unit: K.Pound Million)

Name of Donor	MOHS				MOLG				MOA				Other Ministries*1			
	No.	Loan	Grant	Total	No.	Loan	Grant	Total	No.	Loan	Grant	Total	No.	Loan	Grant	Total
Multi-lateral Donors																
ADB	0	0.0	0.0	0.0	1	2.0	0.0	2.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
ADF	0	0.0	0.0	0.0	1	2.0	0.0	2.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
EDF/EEC	1	0.0	1.2	1.2	2	1.0	1.2	2.2	1	0.0	1.4	1.4	0	0.0	0.0	0.0
IBRD	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
IDA	1	0.1	0.0	0.1	1	1.0	0.0	1.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
IFAD	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
OPEC	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
UNDP	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
UNEPFA	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
UNESCO	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
UNICEF	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
UNIDO	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
WFP	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
Others	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
Total	2	0.1	1.2	1.3	5	6.0	1.2	7.2	1	0.0	1.4	1.4	0	0.0	0.0	0.0
Bi-lateral Donors																
Canada	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0	1	0.0	2.9	2.9
China	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
Denmark	1	0.0	0.0	0.0	1	0.0	0.6	0.6	1	0.0	0.6	0.6	0	0.0	0.0	0.0
Finland	2	0.0	7.2	7.2	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
France	2	0.6	1.0	1.6	0	0.0	0.0	0.0	0	0.0	0.0	0.0	3	50.6	1.0	51.6
Italy	1	3.0	0.0	3.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0	1	0.0	2.0	2.0
Japan	4	12.5	2.8	15.3	1	2.0	0.0	2.0	0	0.0	0.0	0.0	5	6.9	7.5	14.5
Netherlands	3	0.0	0.8	0.8	0	0.0	0.0	0.0	1	0.0	0.5	0.5	4	0.0	0.9	0.9
Norway	1	0.0	3.2	3.2	2	0.0	3.2	3.2	0	0.0	0.0	0.0	2	0.0	3.4	3.4
Sweden	1	0.0	2.3	2.3	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
United Kingdom	0	0.0	0.0	0.0	0	0.0	0.0	0.0	1	0.0	0.4	0.4	0	0.0	0.0	0.0
USA	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	0.0
West Germany	3	0.0	4.3	4.3	4	3.0	4.3	7.3	2	0.0	1.2	1.2	2	0.0	1.8	1.8
Others	2	1.5	0.1	1.6	3	2.0	0.1	2.1	0	0.0	0.0	0.0	0	0.0	0.0	0.0
Total	20	17.6	21.7	39.2	11	7.0	8.3	15.3	5	0.0	2.7	2.7	18	57.5	19.5	76.9
Grand Total	22	17.6	22.9	40.5	16	13.0	9.5	22.5	6	0.0	4.1	4.1	18	57.5	19.5	76.9
Total of Above Ministries													62	88.1	56.0	144.0
Total of Entire Ministries													487	228.1	286.8	514.9

Source : P.21

Remark : *1 Following five ministries : MOH, MOCSS, MOE, MORD & MORDASAW

FIGURES

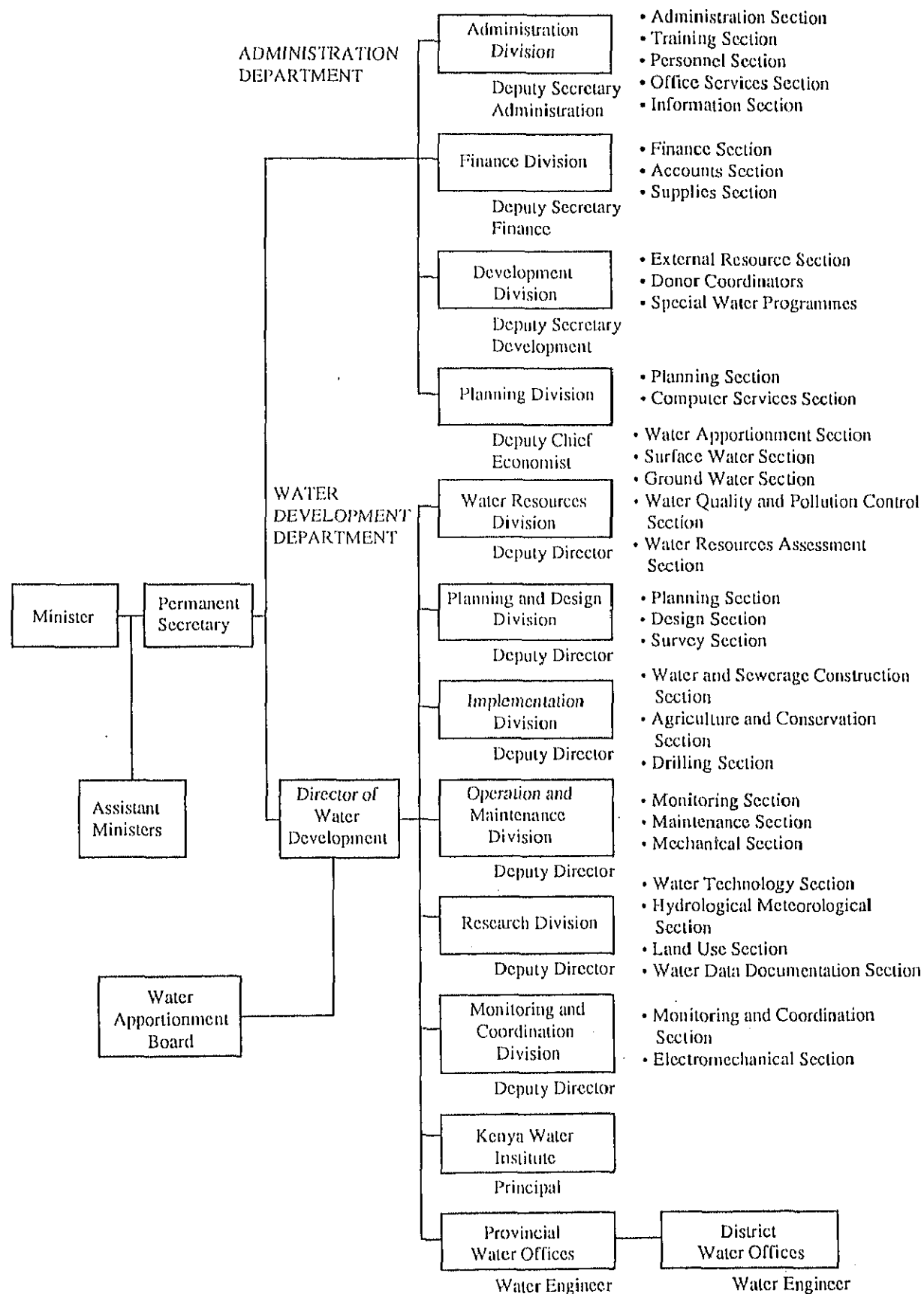


Figure P3.1 Organization Chart
- Ministry of Water Development

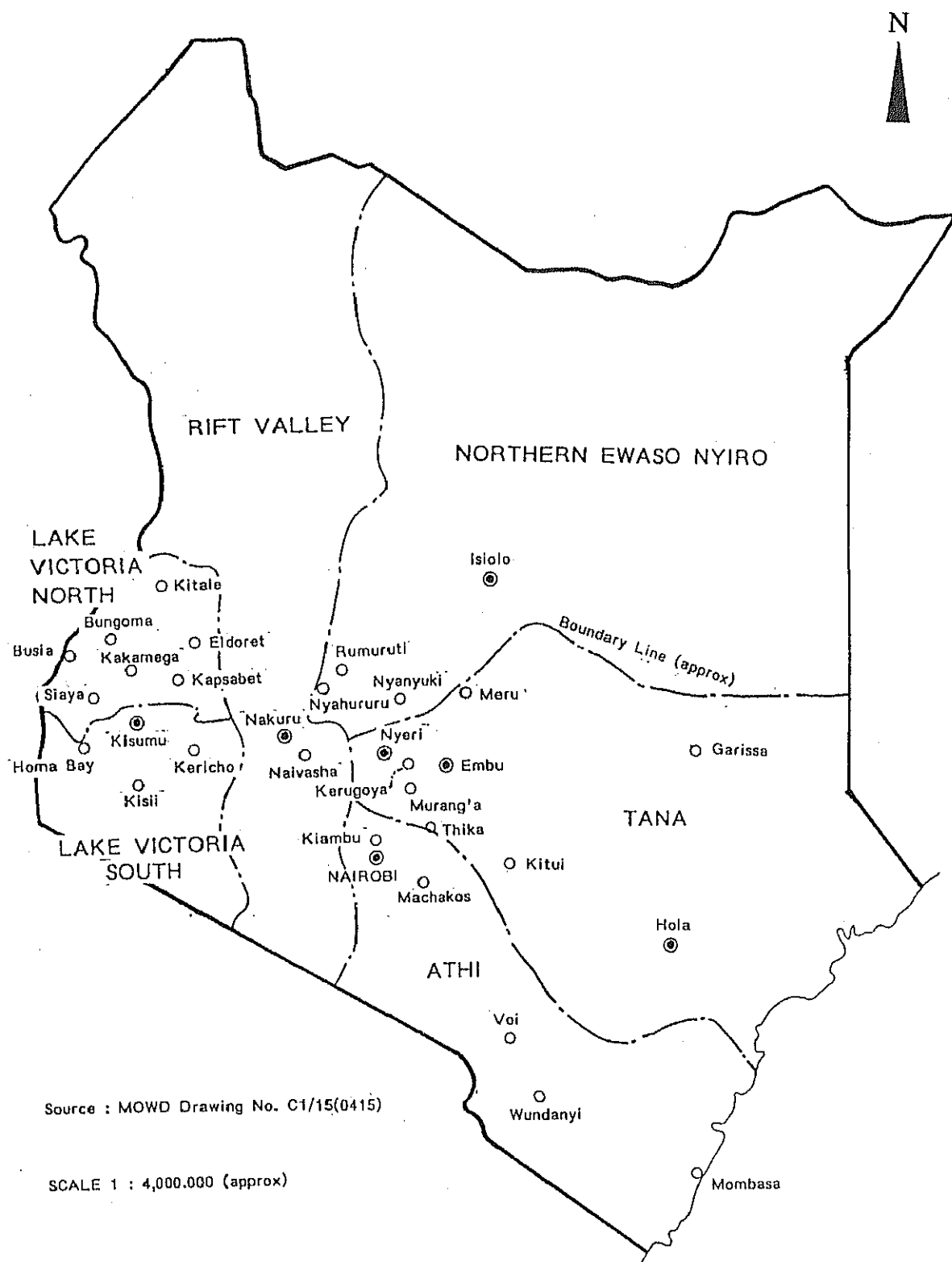


Figure P3.2 Catchment Areas Responsible by Six Catchment Boards

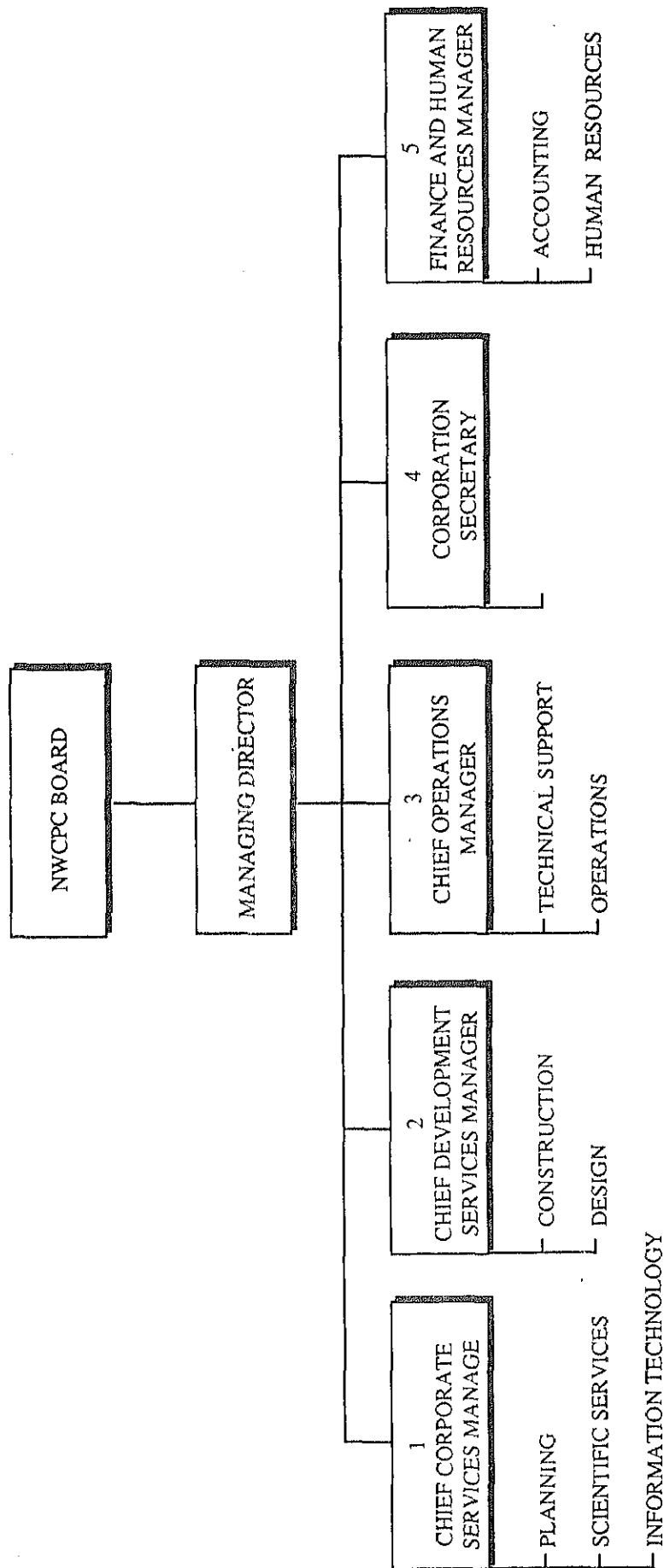


Fig. P3.3

Figure P3.3 Organization Structure -
National Water Conservation and Pipeline Corporation

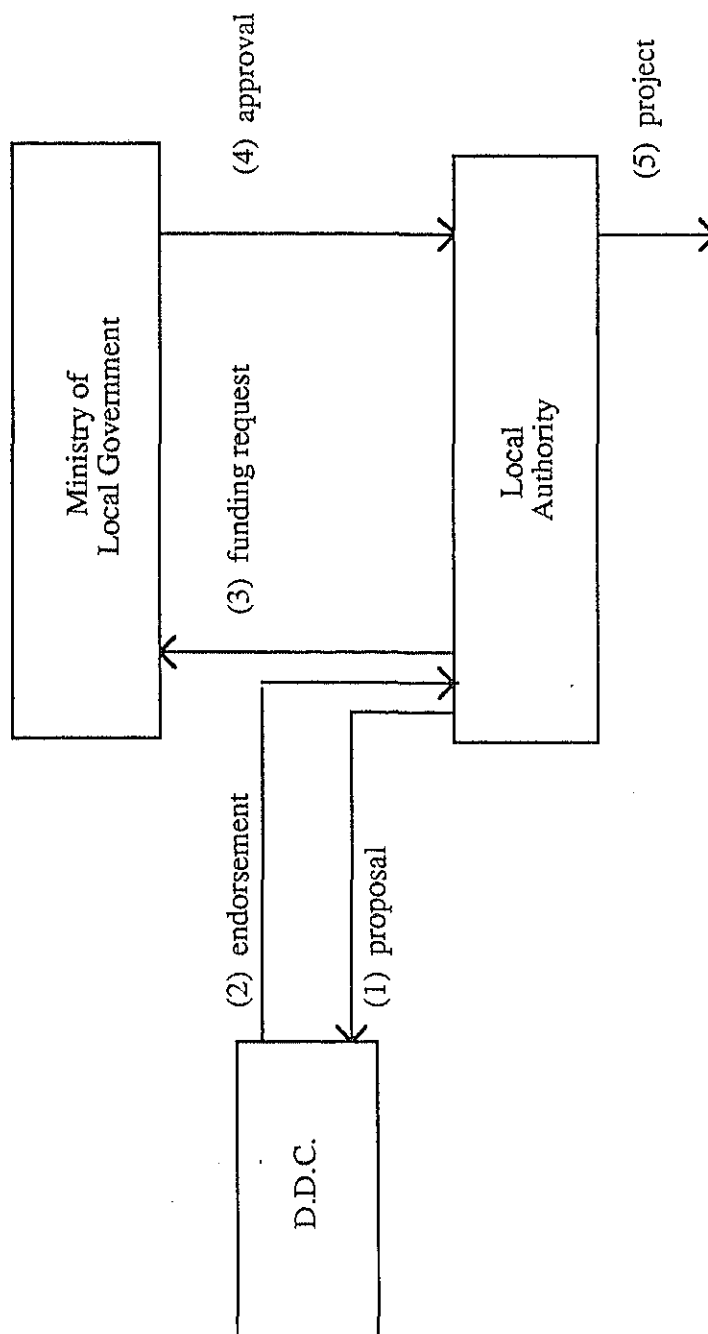
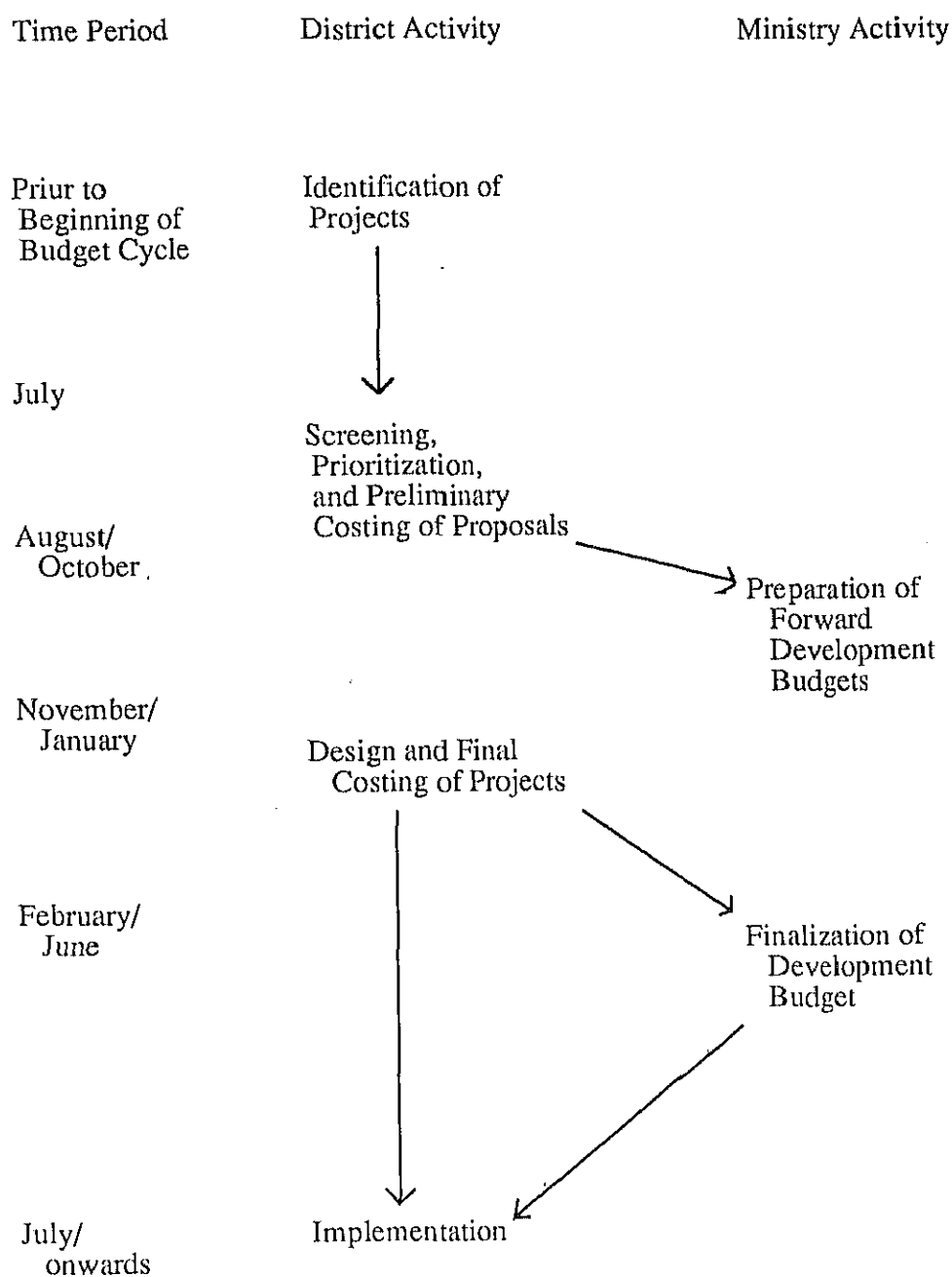


Figure P4.1 Relationship between D.D.C. and Local Authorities



Source: District Focus for Rural Development (Revised)
Office of the President, 1984

Figure P4.2 Annual Budget Cycle (Development)

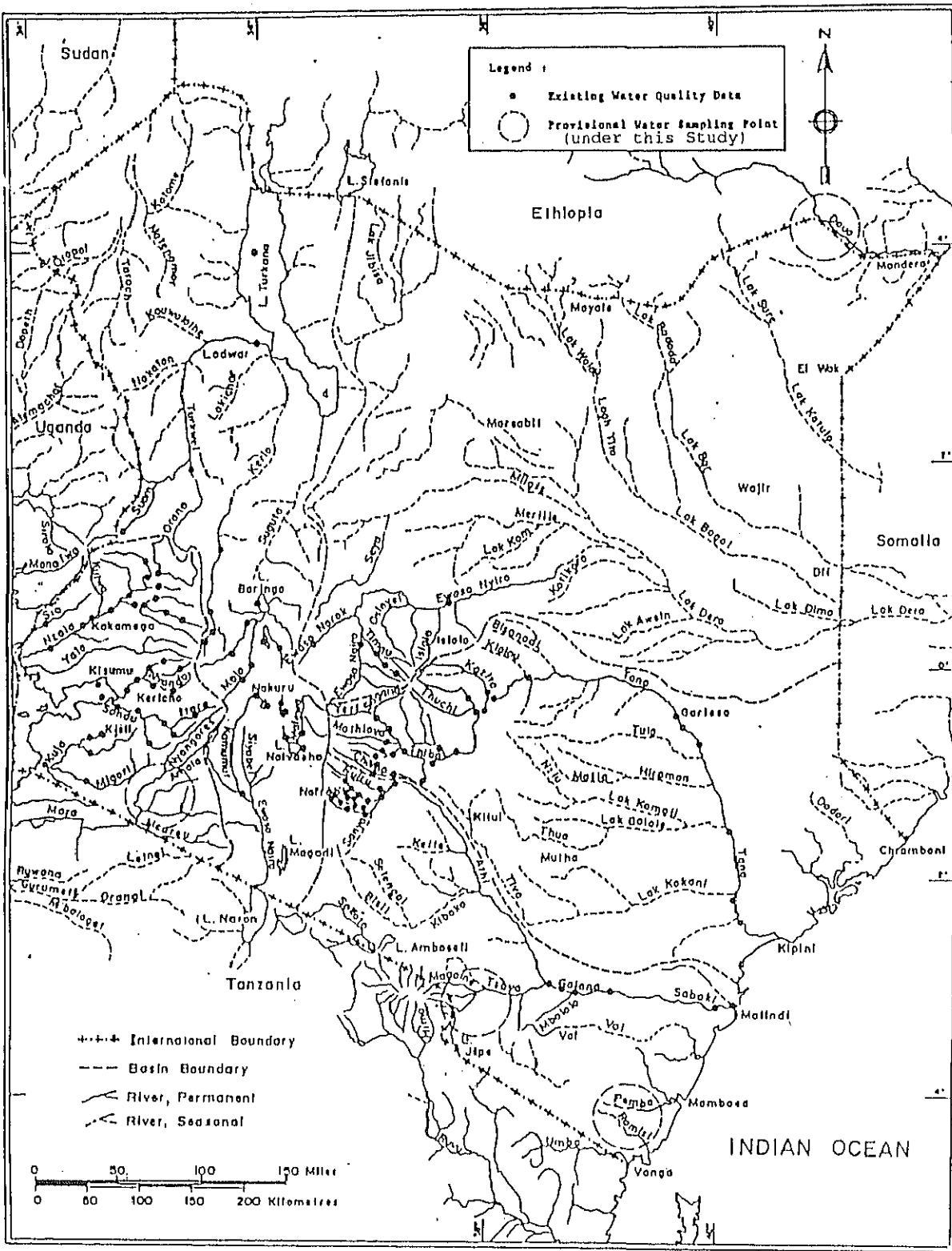
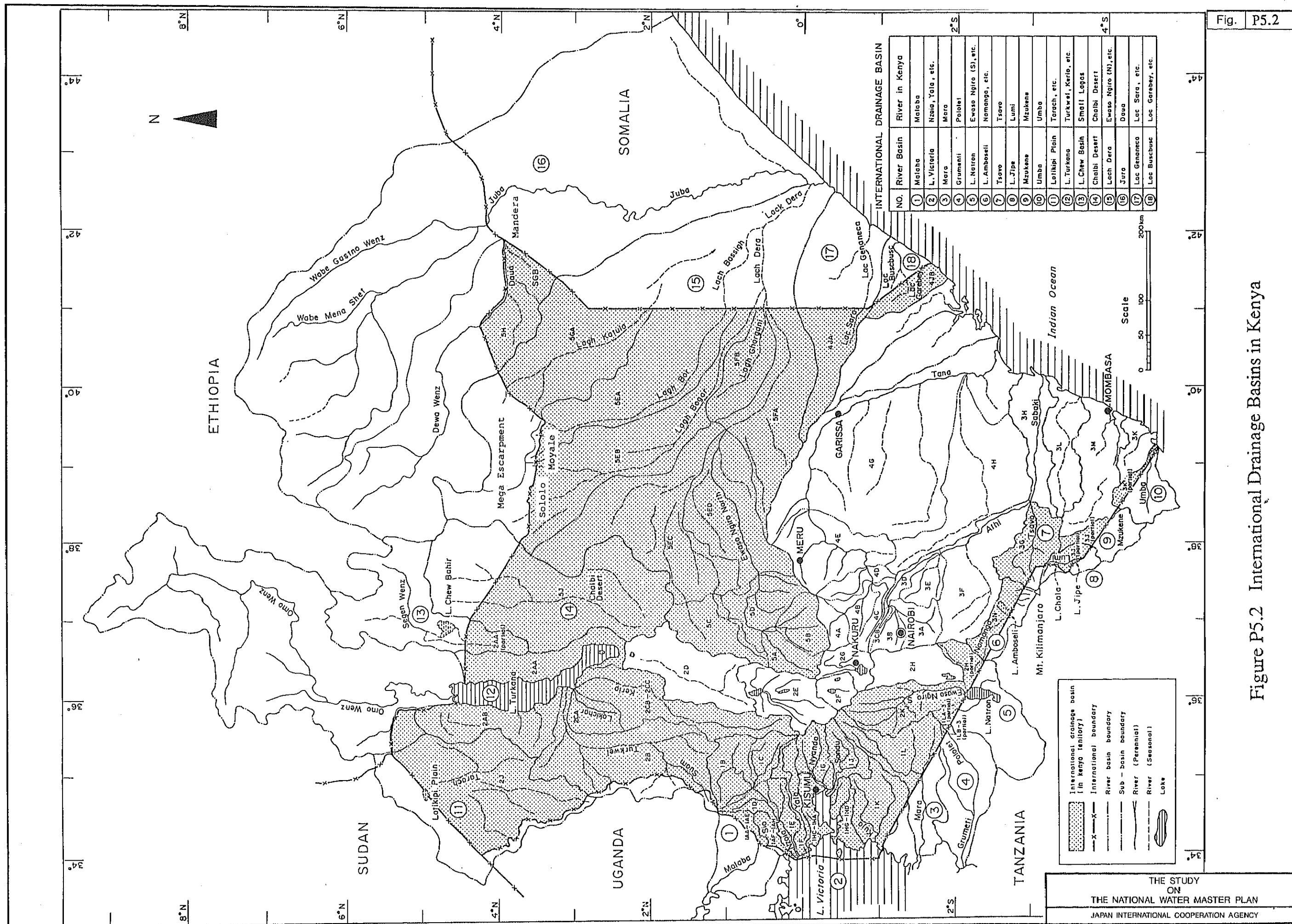


Figure P5.1 Water Quality Sampling Points by MOWD



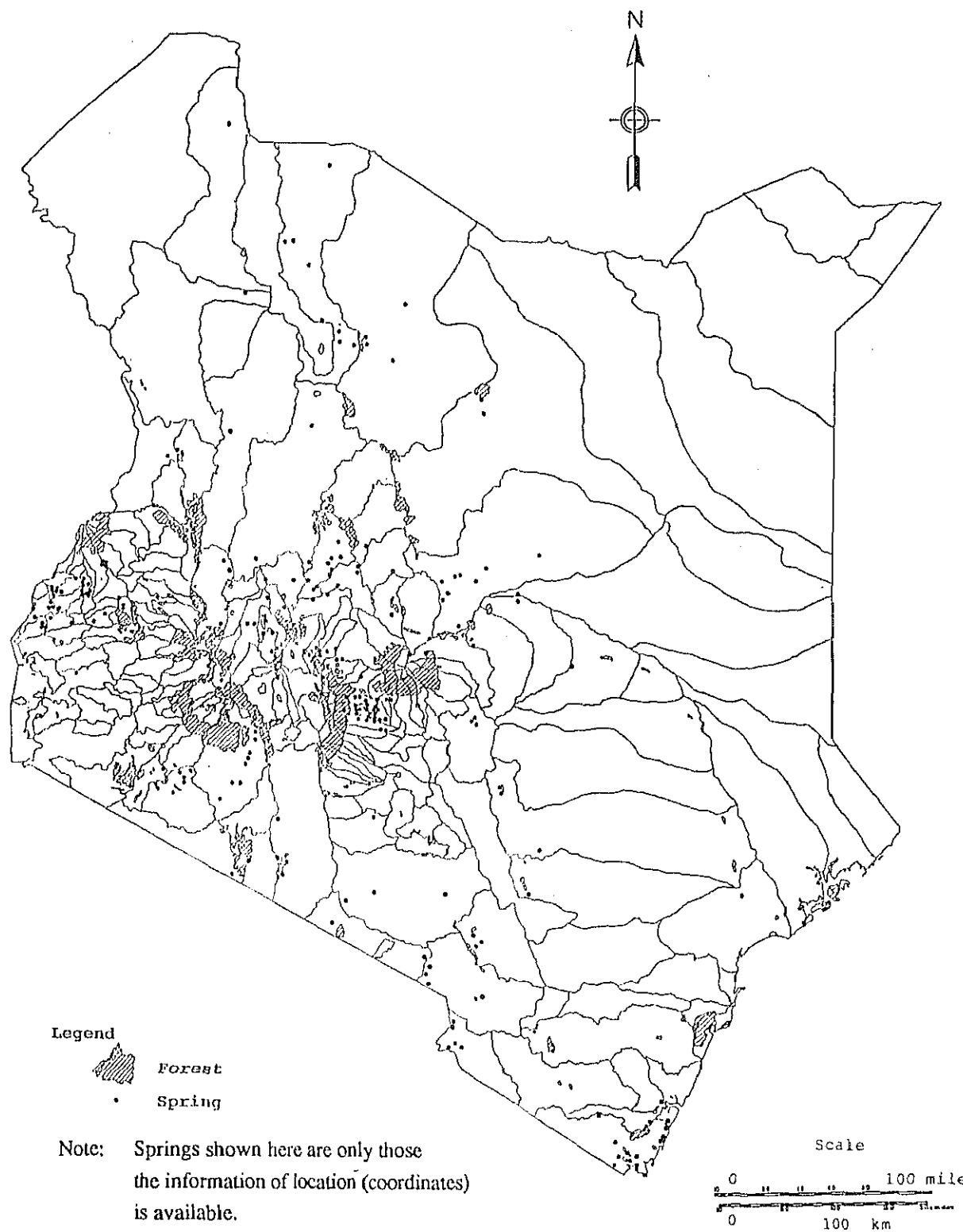


Figure P5.3 Location of Springs and Major Forest Areas

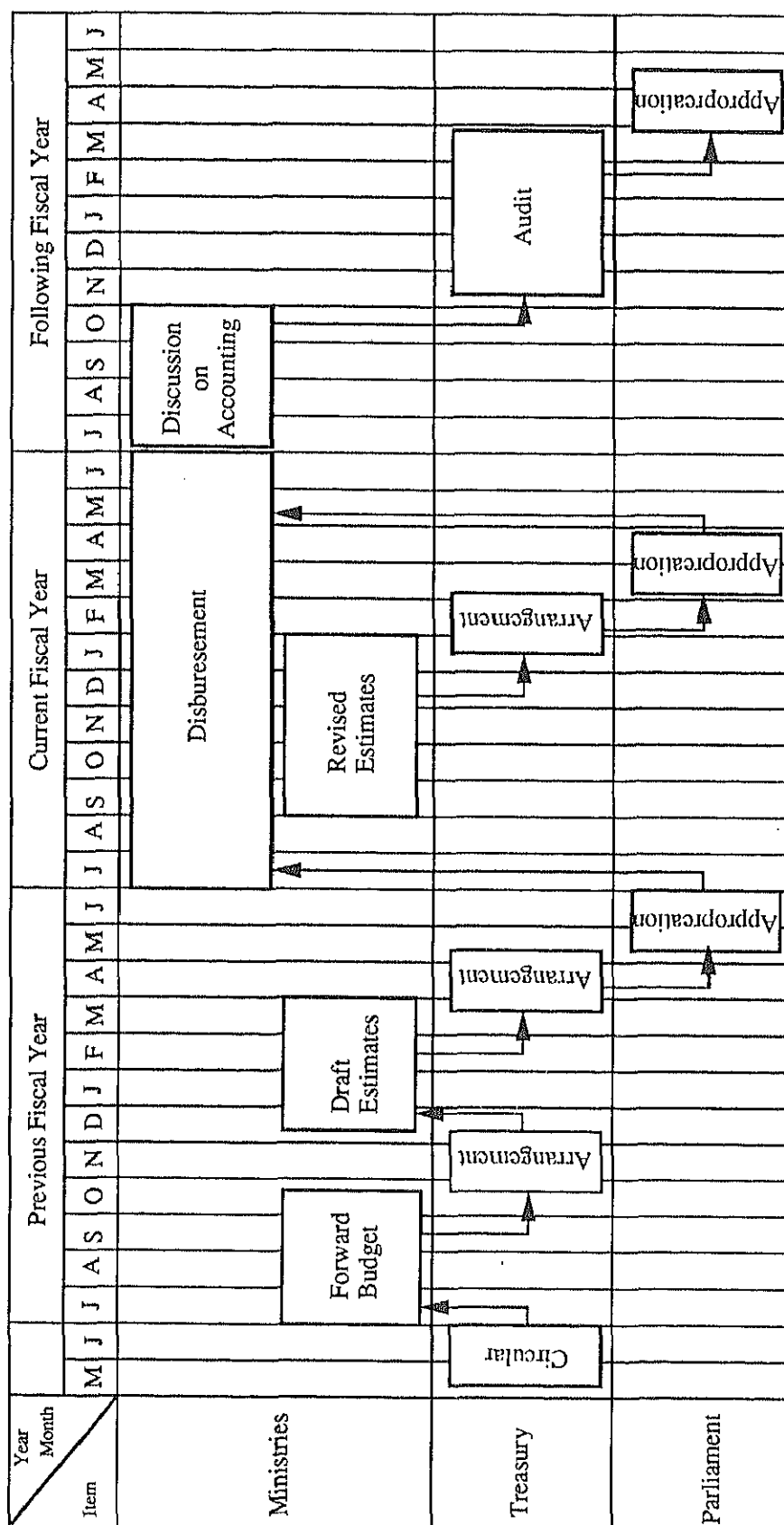


Figure P6.1 Budget Calendar in Kenya

Source : p.06

APPENDIXES

APPENDIX P.1

Functional Description of the Ministry of Water Development

APPENDIX P.1

FUNCTIONAL DESCRIPTION OF THE MINISTRY OF WATER DEVELOPMENT

The Ministry of Water Development is administratively divided into the Administration Department and the Water Development Department which is the only technical department in the Ministry. The Administration Department falls directly under the Permanent Secretary while the Water Development Department is headed by the Director of Water Development who is also the Engineer-in-Chief for the Ministry.

The duties of the two departments and their various divisions and sections is presented below:-

ADMINISTRATION DEPARTMENT

ADMINISTRATION DIVISION

The Administration Division is headed by the Deputy Secretary/Administration and has five sections under it. The Division is responsible for supervision of all the Administration Sections, promotion and discipline, office accommodation and renovations, staff appraisal and annual reports, manpower development and staff training (outside KEWI). The Deputy Secretary is also the Ministry's Security Officer.

Administration Section

The Administration Section is headed by the Under Secretary/Administration and is charged with the responsibility for discipline and promotion, control of funds allocated for administrative purposes, transport and vehicle management, deployment of secretarial staff, boarding and write-offs of equipment and vehicles, motor vehicle expenditure returns, staff and public complaints, supervision of registries, telephone exchange, staff welfare and organization of sports.

Training Section

This section is supposed to be headed by an Under Secretary and is responsible for manpower development, forecasts and projections of manpower requirements, preparation of annual, medium and long-term plans for manpower development and utilization, identification of training course programs, requests to donors for scholarships to meet identified training needs, coordination of technical assistance training programs, and coordination and administration of both local and overseas training programs. This section is also responsible for planning of courses, seminars, workshops, and induction courses for all cadre of staff.

Personnel Section

The Personnel Division is headed by the Principal Personnel Officer and is responsible for the overall personnel management functions, staff establishment, interpretation and implementation of personnel policies and regulations, liaison with the Public Service Commission of Kenya, the Directorate of Personnel Management, the Treasury and heads of Departments for personnel matters.

The Division is also responsible for appointments, placement and staff development, welfare and enumeration, personnel policies, regulations and discipline. Finally, the Division is responsible for the payroll and other enumeration matters, compliment control and personnel cost budgeting.

Office Services Section

The Section is headed by a Senior Executive Officer and is responsible for general office services, distribution of stationary, liaison with the Government Printer on the Ministry's printing requirements, general maintenance of office equipment including telephones, and deployment, supervision and discipline of messangerial staff.

Information Section

This small section is headed by the Chief Information Officer and is responsible for Parliamentary questions, publicity, public relations and dissemination of information on the water sector. The section is also responsible for maintenance of library and publications.

FINANCE DIVISION

The Finance Division was recently created out of the former Administration and Finance Division. It is headed by the Deputy Secretary/Finance and is responsible for management of finance sections, coordination of the Ministry's supervision of exercise and discharge of Accounting/Authorized Officer's delegated powers. It maintains liaisons with the Treasury on signing of contracts and tendering activities.

Finance Section

This Section is headed by the Under Secretary/Finance who is also the Principal Finance and Establishment Officer (PF&EO) and is responsible for supervision and control of finance, financial allocations, vote control and issuance of Authority to Incur Expenditure (AIE), car advances, preparation of recurrent and development estimates and forward budgets. The section is also responsible for surcharges and liaises with the Artoney General's Chambers on legal claims affecting the Ministry, audit queries, Public Accounts Committee matters, stores and procurements.

Accounts Section

The Accounts Section is headed by the Senior Accounts Controller and is responsible for all accounting functions, interpretation and application of financial and accounting regulations and procedures. The Section liaises with the Head of Accountancy Services on financial and accounting matters, prepares Appropriation Accounts and other financial statements, monitors and coordinates Monthly Expenditure Returns, authorizes cheques signatories, and manages the Ministry's bank accounts. The section is also responsible for accounting for the Ministry's assets and liabilities, revenue collection, and accounting and audit queries.

Supplies Section

This section is headed by the Chief Supplies Officer and is responsible for supplies management including storage, procurement, inventory and issuance of stores and returns. The section liaises with the Treasury on supplies services and audit queries related to stores.

DEVELOPMENT DIVISION

The Development Division is headed by the Deputy Secretary /Development and has only the External Resources Section under it. The Division is responsible for formulation and implementation of sectoral development objectives, strategies and policies. The Division is also charged with the responsibility for coordination of forward and draft estimates and external resources.

External Resource Section

The section is headed by the Under Secretary/External Resources and is responsible for coordination of bilateral and international development aid in liaison with the Ministries of Finance, Foreign Affairs, National Development and user departments. It also liaison with donor agencies and the Treasury on Technical Assistance in preparation of budgets for external resources.

PLANNING DIVISION

The Planning Division is headed by the Deputy Chief Economist and is manned by Economists and Statisticians seconded by the Ministry of Planning and National Development as well as Computer Programmers. The Computer Services Section falls under this Division. The Division is responsible for interpretation of sectoral policies and development objectives, formulation of sectoral strategies and preparation of programmes for water and sanitation development. The division is also responsible for preparation of water sectoral plans in liaison with the Ministry of Planning and National Development, coordination and supervision of socio-economic studies, monitoring and evaluation of all

development projects/programs. The Division is also charged with responsibility for coordinating planning work in all departments, divisions and sections as well as overall coordination of computer applications and use in the Ministry.

Computer Services Section

This section is currently headed by a Senior Systems Analyst and the Computer Programmers man the SIDA assisted Wang Mini Computer. The section is responsible for operation of the computer facility, its proper use and maintenance, allocation of priorities between different users and liaison with the Government Computer Centre.

WATER DEVELOPMENT DEPARTMENT

The Water Development Department is headed by the Director of Water Development who is the head of all technical services in the Ministry. The Department is responsible for policy direction and management of water Resources Development and Engineering; Identification, development, operations and maintenance of water resources and supply systems; formulation of long and short-term plans for national water resources conservation and development; minor irrigation, sewerage and other hydraulic systems; development and application of standards for design, construction, operations and maintenance of all hydraulic systems. The Department liaises with local and international organizations on water development matters; provides consultancy services to local authorities and other institutions in design, implementation and maintenance of water and waste water systems and also responsible for all matters related to water supply and sanitation programmes. The Department advises on the national water resources and represents the ministry and the country in international, regional and national forums on water-related matters.

WATER RESOURCES DIVISION

This section is headed by the Deputy Director/Resources and is responsible for assessment of water resources; development of strategies and methods of preservation, conservation, utilization and apportionment of water resources; formulation of pollution control guidelines in accordance with the Water Act; review of National Drinking Water Standards; coordination, collection, analysis and maintenance of water resources data.

Water Apportionment Section

The section is supposed to be headed by the Registrar of Water Rights and is responsible for interpretation and enforcement of the Water Act, interpretation of international treaties on water resources management, prosecution and suits under the Water Act.

Surface Water Section

Headed the Assistant Director/Surface Water and is responsible for surface water resources survey; hydrological and hydrometrological data collection; processing analysis, storage, retrieval, and publication thereof; expansion, maintenance and monitoring of the national hydrometrological network; appraisal of national and regional surface water potential and preparation of hydrological maps.

Ground Water Section

Headed by the Assistant Director/Ground Water and is responsible for planning and coordinating ground water exploration and exploitation activities; preparation of short-and long-term project plans for the assessment and development of ground water resources; reviewing, analyzing and up-dating of ground water data for the preparation of hydrogeological and geophysical maps and report models in liaison with Planning Division.

Water Quality and Pollution Control Section

Headed by an Assistant Director of Water Development and is responsible for coordination to treatment and pollution control activities; monitoring the quality of the National Water Resources including water supplies; Monitoring the quality of effluent from industrial, agricultural, rural and urban establishments; preparation of water quality maps and reports; development of pollution control guidelines; undertaking catchment protection studies; ensuring the preparation of environmental assessment statements prior to project implementation; formulating guidelines on proper and safe disposal of liquid and solid wastes.

Water Resources Assessment Section

Headed by an Assistant Director of Water Development and responsible for development of National Water Resources planning; formulating short and long-term water resources development plans; establishing data evaluation programmes and Resources Information and Referral Centre.

PLANNING AND DESIGN DIVISION

The Planning and Design Division is headed by the Deputy Director of Water Development and is responsible for coordinating feasibility studies, planning and design activities; providing planning and design services for local authority water supply and sewerage development; liaison with the heads of implementation, operations and maintenance, and Water Resources and Research Divisions on projects development; proposing design policies and standards; evaluating project proposals and making recommendations; ensuring timely preparation of project progress reports; ensuring that adequate control is maintained over expenditure on planning and design activities.

Planning Section

Headed by an Assistant Director of Water Development is responsible for development of national water objectives based on long-term projections; liaison with the surface water and ground water sections on compilation and analysis of the raw hydrological and hydrogeological data; recommending the commissioning of river basins studies; liaising with the various river basin Development Authorities on short and long-term plans for the purpose of up-dating the National Water Master Plan; coordinating specific programmes and plans (including water supply, sewerage, irrigation, land use, fisheries, recreation, drainage, and land reclamation) to ensure effective catchments management; developing systems for determining the priorities on allocating water resources; liaising with land board authorities over change of land use applications; compiling District Water Master Plans and appraisal of projects for the preparation of project briefs.

Design Section

Headed by an Assistant Director of Water Development and is responsible for coordinating design activities including the preparation of tender documents; providing design services to local authorities for water supply and sewerage projects; up-dating the design manual and reviewing detailed schedules for approving budgets for project designs.

Survey Section

Headed by an Assistant Director of Water Development and is responsible for coordinating the ground and aerial survey of projects; the drawing office activities; up-dating survey standards and reviewing budgets for survey activities.

IMPLEMENTATION DIVISION

The Implementation Division is headed by a Deputy Director of Water Development and is responsible for the administration of direct labour works; supervision and financial control of water contracts; water conservation programmes, minor irrigation and self-help water projects, coordination of ranch/range programs and drilling activities.

Water and Sewerage Construction Section

Headed by an Assistant Director of Water Development is responsible for coordination of direct labour teams and their deployment, scrutinizing tender documents on sewerage and water projects; coordination of construction progress and budgetary requirements for all water and sewerage projects.

Agriculture and Conservation Section

Headed by an Assistant Director of Water Development and responsible for liaison with other related Ministries/Organizations on conservation programmes; design and implementation of conservation projects; design supervision and maintenance of minor irrigation projects and co-ordination of all ranch/range water programmes.

Drilling Section

Headed by an Assistant Director of Water Development and is responsible for compilation of drilling programs, co-ordination of drilling activities and liaison with Ground Water Section on geophysical data requirement.

OPERATIONS AND MAINTENANCE DIVISION

The Operations and Maintenance Division is headed by the Deputy Director of Water Development and responsible for development and review of Operational Standards for water and waste water systems; maintenance of operations standards; management, supervision, marketing and promotion of water supply services; formulation of water pricing guidelines and strategies for rural and urban water supplies and waste water systems and rehabilitation, augmentation and extension of works on water and waste water systems.

Monitoring Section

Headed by an Assistant Director of Water Development is responsible for processing data on gazetting of water supplies; planning maintenance schedule of the plant and equipment; ensuring adequate supply of chemicals for water production and water meters; compilation and analysis of water production and sales returns and monitoring operations of existing water supplies through operational charts.

Maintenance Section

Headed by an Assistant Director of Water Development is responsible for advising on the formulation of long term water supply and sewerage objectives and standards; preparing budgets for water supply operations in liaison with Provincial Water Engineers and District Water Engineers; up-dating and documenting procedures for operation and maintenance of water supplies; monitoring performance of the existing water supplies against established plans and budgets and formulating guidelines on preventive maintenance of water supply systems plants and equipment.

Mechanical Section

Headed by an Assistant Director of Water Development is responsible for coordinating mechanical engineering operations; maintenance of plant, equipment and vehicles;

reviewing design specifications and performance standards for mechanical plant and equipment; implementation of policies systems and techniques for mechanical services; preparation of detailed maintenance and repair schedules for static plants equipment and vehicles; ensuring adequate supply of mechanical plants, vehicles and equipment stores and management of workshops.

MONITORING AND CO-ORDINATION DIVISION

Headed by Deputy Director of Water Development and is responsible for monitoring progress of implementation activities on all water supply and sewerage projects; co-ordination of donor supported programmes; co-ordination of provision of electromechanical services and compilation and analysis of progress reports related to water resources development and management.

Monitoring and Co-ordination Section

Headed by an Assistant Director of Water Development responsible for monitoring the performance of water supplies; analysis of operations and maintenance returns; monitoring of water production and sales, compilation of projects and programs progress reports and monitoring of implementation of donor supported programs.

Electromechanical Section

Headed by an Assistant Director of Water Development and responsible for coordination of electromechanical services, ensuring adherence to installation policies of electromechanical equipment at projects planning design and implementation stages; development of electromechanical services and installations; co-ordination and liaison with Kenya Posts and telecommunications equipment and network.

RESEARCH DIVISION

Headed by a Deputy Director of Water Development and responsible for formulation of water research policies and objectives; coordinating research activities in water resources and waste water engineering; liaison with other national and international research and development organizations on matters related to water research.

Water Technology Section

Headed by an Assistant Director of Water Development and responsible for carrying out research in water technology and formulation of water technology research programmes.

Hydrological and Meteorological Section

Headed by an Assistant Director of Water Development responsible for carrying out research on Hydrology and climatology within the water catchment and formulation of hydrological and meteorological research programmes.

Land Use Section

Headed by an Assistant Director of Water Development and responsible for carrying out research on land use (including irrigation, water and soil conservation and environmental impact on water development) and formulating and use research programs.

Water Data Documentation Section

Headed by an Assistant Director of Water Development and responsible for development and maintenance of Water Documentation Centre and preparation of printing and publication of research findings.

KENYA WATER INSTITUTE (KEWI)

Headed by the Principal and responsible for the management, direction and administration of the Kenya Water Institute; implementation of training policies, approved curriculum and standards applicable to courses; planning and organization of suitable courses, seminars and workshops for the Ministry's staff in liaison with Deputy Secretary of Administration; assessment and recruitment of applicants for pre-service training in liaison with the Directorate of Personnel Management, the Public Service Commission and the Ministry; assisting in recruitment and deployment of lecturers for the Institute; coordination of training programmes of the Ministry's personnel conducted at the National Polytechnics and other local training institutes in liaison with Deputy Secretary of Administration.

DONOR CO-ORDINATION

To co-ordinate the various donor water programs in the Ministry donors have posted program coordinators. These include SIDA, NORAD, FINNIDA, JICA, WHO, DANIDA, France and Belgium. The NORAD Coordinator had to leave towards the end of 1990 when Kenya closed the Norwegian embassy.

The donor Programme Coordinators are responsible for coordination of their country funded programmes in accordance with the agreed objectives and strategies; monitoring and evaluating the planning and program implementation of various program components in liason with the Plannind Division; follow up action on agreed undertakings and recommendations in liaison with the Division Heads; analyzing the requirements related to programme organization, manpower and budgets; assisting in the preparation of the plans of operation and following up their implementation; assessing the new project proposals

and recommending improvements; assisting in preparation of the biannual progress reports and other program related documents; liaising with Deputy Secretaries and Directors on matter related to disbursement of external resources funds and assisting in the preparation of sectoral review missions and other program evaluation missions.

SPECIAL PROGRAM/PROJECT

There are a number of Special donor funded water Programmes/projects in different parts of the country. The water programs have their own Management Teams. These include:-

- Tharaka Water Supply and Sanitation Project,
- Kwale Water Supply and Sanitation Project,
- Western Kenya Water Supply and Sanitation Project (KEFINCO),
- Kilifi Water Supply and Sanitation Project,
- Water Resources Assessment and Planning Project (WRAP).

The on-going Eastern Province Water Project was terminated in mid 1990 while the Water Financial Management Project (WAFIM) although not officially terminated is understood to be under the management of a local consultant.

The Project Managers and their Management Teams are responsible for planning and implementation of their projects in accordance with fulfillment of project objectives and strategies; preparation of project progress reports and new project proposals and project finance control and management.

PROVINCIAL WATER OFFICES

Each of the 8 provinces has a Provincial Water Engineer is the representative of MOWD in the provinces and responsible to the Director of Water Development for development, maintenance, control and supervision of professional water resources operations and functions in the province.

DISTRICT WATER OFFICES

In each districts has a District Water Engineer who is the representative of MOWD in the District and responsible to the PWE for overall planning control and direction of technical services in the District and administrative and financial management.

APPENDIX P.2

Water Quality Standards in Japan

APPENDIX P.2
WATER QUALITY STANDARDS IN JAPAN
(FOR REFERENCE)

1. Quality Standards for Effluents Discharged into Public Waters in Japan
2. Water Quality Standards Used in Japan (Receiving Waters)

Note: English translation was extracted from Ref. P.26.

QUALITY STANDARDS FOR EFFLUENTS DISCHARGED INTO PUBLIC WATERS IN JAPAN

According to EA 1972a, the quality standards for effluents discharged into public waters in Japan are intended to safeguard public health and preserve the environment.

a) Standards relating to protection of public health

Item	Permissible value (mg/l)
Cadmium and its compounds	< 0.1
Cyanide compounds	< 1
Organic phosphorus compounds (parathion, methyl parathion, methyl dimeton and EPN only)	< 1
Lead and its compounds	< 1
Hexavalent chromium compounds	< 0.5
Arsenic and its compounds	< 0.5
Total mercury	not detectable ⁽¹⁾
Alkyl mercury compounds	not detectable ⁽¹⁾

b) Standards relating to preservation of the environment

Item	Permissible value (mg/l)
pH	5.8 - 8.6 for effluents discharged into public water bodies other than coastal waters 5.0 - 9.0 for effluents discharged into coastal waters
Biochemical oxygen demand, chemical oxygen demand	< 160 (daily average < 120)
Suspended solids	< 200 (daily average < 150)
N-hexane extract	< 5 (mineral oil) < 30 (animal and vegetable fats)
Phenols	< 5
Copper	< 3

Item	Permissible value (mg/l)
Zinc	< 5
Dissolved iron	< 10
Dissolved manganese	< 10
Chromium	< 2
Fluorine	< 15
Coliform bacteria (MPN/cm ³)	3000 (daily average)

The standards relating to preservation of the environment apply to effluents from industrial plants and other establishments, when their flow is at least 50 m³/day.

The standards for pH and the dissolved iron content do not apply to effluents from industrial plants and other establishments engaged in sulfur mining or processing, including mining for iron pyrites when coexistent with sulfur.

The standards relating to biochemical oxygen demand apply to all public waters other than coastal and lake waters. The standards for chemical oxygen demand apply exclusively to effluents discharged in coastal and lake waters.

(1) "Not detectable" means that the substance is below the level detectable by the method designated by the Director General of the Environment Agency.

WATER QUALITY STANDARDS USED IN JAPAN

According to EA 1972a, the water quality standards used in Japan are intended to protect public health and the environment.

a) Standards relating to protection of public health

Item	Permissible value (mg/l)
Cyanide	not detectable
Alkyl mercury	not detectable
Organic phosphorus (parathion, methyl parathion, methyl dimeton and EPN only)	not detectable
Cadmium	< 0.01
Lead	< 0.1
Hexavalent Chromium	< 0.05
Arsenic	< 0.05
Total mercury	not detectable

b) Standards relating to preservation of the environment

b1) Rivers

Category	Use	Daily average value				
		pH	Biochemical oxygen demand (mg/l)	Suspended solids (mg/l)	Dissolved oxygen (mg/l)	Coliform bacteria (MPN/ /100 ml)
AA	Water supply, class 1; conservation of natural environment and uses of categories A to E	6.5 - 8.5	< 1	< 25	> 7.5	< 50
A	Water supply, class 2; fishery, class 1; bathing and uses of categories B to E	6.5 - 8.5	< 2	< 25	> 7.5	< 1000
B	Water supply, class 3; fishery, class 2; and uses of categories C to E	6.5 - 8.5	< 3	< 25	> 5	< 5000
C	Fishery, class 3; industrial water class 1, and uses of categories D to E	6.5 - 8.5	< 5	< 50	> 5	-
D	Industrial water, class 2; agricultural water(1), and uses of category E	6.0 - 8.5	< 8	< 100	> 2	-

(1) For agricultural water, pH shall be between 6.0 and 7.5 and dissolved oxygen shall not be less than 5 mg/l (The same applies to the standard for lakes).

Category	Use	pH	Biochemical oxygen demand (mg/l)	Suspended solids (mg/l)	Dissolved oxygen (mg/l)	Coliform bacteria (MPN/100 ml)
E	Industrial water, class 3; conservation of environment	6.0 - 8.5	< 10	Floating matter should not be observed	> 2	-

b2) Lakes (natural lakes, reservoirs, marshes and artificial lakes with more than 10 million m³)

Daily average value						
Category	Use	pH	Biochemical oxygen demand (mg/l)	Suspended solids (mg/l)	Dissolved oxygen (mg/l)	Coliform bacteria (MPN/100 ml)
AA	Water supply, class 1; fishery, class 1; conservation of natural environment and uses of categories A to C	6.5 - 8.5	< 1	< 1	> 7.5	< 50
A	Water supply, classes 2 and 3; fishery, class 2; bathing and uses of categories B to C	6.5 - 8.5	< 3	< 5	> 7.5	< 1000
B	Fishery, class 3; industrial water, class 1; agricultural water, and uses of category C	6.5 - 8.5	< 5	< 15	> 5	-
C	Industrial water, class 2; conservation of environment	6.0 - 8.5	< 8	Floating matter should be not observed	> 2	-

b3) Coastal waters

Daily average value						
Category	Use	pH	Biochemical oxygen demand (mg/l)	Dissolved oxygen (mg/l)	Coliform bacteria (MPN/100 ml)	N-hexane extract
A	Fishery, class 1; bathing and uses of categories B to C	7.8 - 8.3	< 2	> 7.5	< 1000 ⁽¹⁾	not detectable
B	Fishery, class 2; industrial water and uses of category C	7.8 - 8.3	< 3	> 5	-	not detectable
C	Conservation of environment	7.0 - 8.3	< 8	> 2	-	-

(1) For oyster culture this must be < 70.

As regards the uses mentioned in the previous tables, the following are the general characteristics of the waters corresponding to them:

- *conservation of the environment*: waters that ensure conservation of the landscape and other natural resources;

- *water supply, class 1*: waters whose treatment can be limited to filtration;

- *water supply, class 2*: waters whose treatment requires sedimentation and filtration;

- *water supply, class 3*: waters whose treatment involves more sophisticated operations than sedimentation and filtration;

- *fisheries, class 1*: waters proper for aquatic life, namely trout and bulltrout living in oligosaprobic waters in the case of rivers, and for red sea bream, yellowtail and seaweed, in the case of coastal waters;

- *fisheries, class 2*: waters proper for aquatic life, namely for salmonidae and sweetfish living in oligosaprobic waters, in the case of rivers, and for grey mullet, laver, etc., in the case of coastal waters;

- *fisheries, class 3*: waters proper for aquatic life, namely for carp and silver carp;

- *water for industry, class 1*: waters whose treatment can be limited to sedimentation;

- *water for industry, class 2*: waters whose treatment requires chemical products;

- *water for industry, class 3*: waters whose treatment involves special processes;

- *conservation of the environment*: waters that cause no inconvenience to people in their daily life, including walks by the riverside, etc.

APPENDIX P.3

Helsinki Rules of the Uses of the Waters of International Rivers

APPENDIX P.3

HELSINKI RULES on the USES OF THE WATERS OF INTERNATIONAL RIVERS

(Extraction: Articles of Chapters 1 and 2)

CHAPTER 1

GENERAL

Article I

The general rules of international law as set forth in these chapters are applicable to the use of the waters of an international drainage basin except as may be provided otherwise by convention, agreement or binding custom among the basin States.

Article II

An international drainage basin is a geographical area extending over two or more States determined by the watershed limits of the system of waters, including surface and underground waters, flowing into a common terminus.

Article III

A "basin State" is a state the territory of which includes a portion of an international drainage basin.

CHAPTER 2

EQUITABLE UTILIZATION OF THE WATERS OF AN INTERNATIONAL DRAINAGE BASIN

Article IV

Each basin State is entitled, within its territory, to a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin.

Article V

- (1) What is a reasonable and equitable share within the meaning of Article IV is to be determined in the light of all the relevant factors in each particular case.

- (2) Relevant factors which are to be considered include, but are not limited to:
- (a) the geography of the basin, including in particular the extent of the drainage area in the territory of each basin State;
 - (b) the hydrology of the basin, including in particular the contribution of water by each basin State;
 - (c) the climate affecting the basin;
 - (d) the past utilization of the waters of the basin, including in particular existing utilization;
 - (e) the economic and social needs of each basin State;
 - (f) the population dependent on the waters of the basin in each basin State;
 - (g) the comparative costs of alternative means of satisfying the economic and social needs of each basin State;
 - (h) the availability of other resources;
 - (i) the avoidance of unnecessary waste in the utilization of waters of the basin;
 - (j) the practicability of compensation to one or more of the co-basin States as a means of adjusting conflicts among uses; and
 - (k) the degree to which the needs of a basin State may be satisfied, without causing substantial injury to a co-basin State;
- (3) The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is a reasonable and equitable share, all relevant factors are to be considered together and a conclusion reached on the basis of the whole.

Article VI

A use of category of uses is not entitled to any inherent preference over any other use or category of uses.

Article VII

A basin State may not be denied the present reasonable use of the waters of an international drainage basin to reserve for a co-basin State a future use of such waters.

Article VIII

1. An existing reasonable use may continue in operation unless the factors justifying its continuance are outweighed by other factors leading to the conclusion that it be modified or terminated so as to accommodate a competing incompatible use.
2.
 - (a) A use that is in fact operational is deemed to have been an existing use from the time of the initiation of construction directly related to the use or, where such construction is not required, the undertaking of comparable acts of actual implementation.
 - (b) Such a use continues to be an existing use until such time as it is discontinued with the intention that it be abandoned.
3. A use will not be deemed an existing use if at the time of becoming operational it is incompatible with an already existing reasonable use.

