



ACTION PLAN

CHAPTER 4

## I INTRODUCTION

This chapter lists the ongoing programmes and programmes proposed for each subsector in order to achieve the **defined goals, especially the Millennium development goals**. In addition, these programmes are in direct relation with the subsector strategies adopted in the SDEA.

The programmes represent “sets” of actions to be undertaken at national level or in the various geoclimatic zones. A programme may be broken down into several “projects” funded by different agencies, provided that the “programme approach” is adopted in such a way that its integrated character is maintained.

Detailed programming of these various activities and the political choices to be made concerning the projects are the prerogative of the Government via the HCNE, CNGE and CTIE and the competent technical departments.

The proposed programmes are spread over an initial period running from 2000 to 2010 and a second period from 2011 to 2015. However, with regard to agricultural water supply and water resources, the action plans are defined for the period 2000-2020.

A financial analysis of each subsector was given in section 2.3 of chapter 3. This analysis summarises the funding requirements for each subsector under main topics (construction of physical infrastructure, capacity building, improvement of knowledge, institutional strengthening) in order to achieve the aims set. The reader should refer to this chapter for all financial aspects and for a summary of the programmes proposed in the water and sanitation sector.

### Priorities at national level

On the basis of the assessment of needs, strategies and policies, the following main priorities may be distinguished for action at national level:

- development of physical infrastructure,
- capacity building,
- improvement of basic knowledge in each subsector, in particular concerning water resources,
- strengthening of the institutional, legal and regulatory frameworks,
- introduction of a set of procedures and methodologies for programming and planning actions in each subsector in compliance with the Water Code, all of this being integrated into the decentralisation process currently underway.

### Priorities in each subsector

The priority actions to be undertaken in each subsector are set out in detail in the thematic volumes. A brief summary of these actions is given below.

In the field of drinking water (village and urban/semi-urban water supply subsectors), while pursuing the development of hydraulic infrastructure for drinking water supplies, it is of paramount importance to start a new generation of projects aimed at **capacity building** at all levels as quickly as possible in order to guarantee permanence of the investments and long working life of the facilities. In addition, considering hydraulic infrastructure requirements and in conformity with the Water Code's stipulations concerning equitable access to water, future programmes must be concentrated in the least privileged areas of Chad in the coming years.

In the field of pastoral water supplies, the main priority at national level is to **improve basic knowledge** of each subsector, in particular with respect to livestock numbers and fodder carrying capacities. With better knowledge of these parameters, it will be possible to plan and programme pastoral water supply structures that are suited to realities in the field while contributing to the development of the entire stock-rearing subsector.

The priority in the field of agricultural water supplies is **capacity building** with regard to the maintenance and operation of the major irrigation areas. In addition, the development of private irrigation areas must be encouraged, along with the rehabilitation of certain irrigation areas, giving priority to the training and organisation of peasant farmers.

With regard to rural sanitation, the priority is to **disseminate health education programmes** and build basic health infrastructure such as improved traditional latrines. In the field of urban and semi-urban sanitation, priority is given to **individual sanitation** via the construction of latrines suited to the various contexts, the introduction of **community waste collection systems** and programmes to train people to take elementary sanitation measures. Depending on the funds available, wastewater and stormwater disposal systems may be developed in the larger towns. With regard to industrial sanitation, the priority is to **define legal standards** to restrict the various types of industrial effluent discharged into the environment.

As far as water resources are concerned, the priority is to **improve knowledge** of the operation of the major water-bearing systems and surface water systems, and the manner in which they are interrelated. To this end, mechanisms must be set up for collecting and processing data from existing and future projects.

## 2 VILLAGE WATER SUPPLY ACTION PLAN

### Proposed action plan for village water supply 2000-2010

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results achievements	Period	Impacts	Status
Strengthening of legal, regulatory and organisational frameworks	Integrated Plan for water development	Strengthening of the legal/regulatory framework	UNDP	For Ref. (Projects accounted for in water resources)	National	An approved document to serve as a reference for the development and integrated management of water resources National capacity building	1998-2002	Integrated and sustainable management of water resources and the facilities for their mobilisation and exploitation National officers trained in water resource management and monitoring	Ongoing
		Support for obtaining an organisational framework for the local management of water							
		Capacity building							
Water Policy Project	Water Policy Project	Strengthening of the legal/regulatory framework	FAC	For Ref. (Projects accounted for in water resources)	National	Institutional and legal frameworks defined Strengthened water management capacities Organisational framework for hydraulic structure management defined and operational	1998-2002	Institutional, legal and regulatory environment defined Strengthened water management capacities Support for defining operating procedures for management of hydraulic structures and the water service	Ongoing
		Support for obtaining an organisational framework for the local management of water							
		Capacity building							
Water Policy Project phase 2	Water Policy Project phase 2	Strengthening of the legal/regulatory framework	FAC	For Ref. (Projects accounted for in water resources)	National	Institutional and legal frameworks defined Strengthened water management capacities	2003-2006	Institutional, legal and regulatory environment defined Strengthened water management capacities Procedures for management of hydraulic structures and water supply service applied	Under discussion
		Support for obtaining an organisational framework for the local management of water							
		Capacity building							
Governance and local management of water	Governance and local management of water	Strengthening of the legal/regulatory framework	UNDP	For Ref. (Projects accounted for in water resources)	National	Setting up of local, regional and national water management structures Knowledge improvement Support for local economic development	2003-2007	Existence of local, regional and national water management capacities Operating procedures for management of hydraulic structures and the water service defined and applied at full scale over an area Replication of management methods Creation of income from water development	Under discussion
		Support for obtaining an organisational framework for the local management of water							
		Capacity building							
<b>Total funds obtained or under discussion concerning the support measures for 2000-2010</b>									

List of programmes as of December 2001

Proposed action plan for village water supply 2000-2010 (contd)

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/achievements				Period	Impacts	Status	
						HP <sup>1</sup>	BSU <sup>2</sup>	DWS <sup>3</sup>	Well				Reh <sup>4</sup>
Improve in village drinking water supply	Village water supply programme in Sudanian zone	Improvement of water supply Support for obtaining an organisational framework for the local management of water	AFD	4 500 000 000	Sudanian Zone	265			250	1999-2002		Ongoing	
	Village water supply programme of the 8th EDF plan in Chad	Improvement of water supply Support for obtaining an organisational framework for the local management of water	EU/EDF	12 000 000 000	Western Sahelian Zone	1 650			0	1999-2004		Ongoing	
	Village water supply programme in the Ouaddai / Biltine	Improvement of water supply Support for obtaining an organisational framework for the local management of water	KFW/AFD/EDF	4 000 000 000	Eastern Sahelian Zone	300			200	2002-2005		Ongoing	
	Village water supply programme in Mayo-Kebbi	Improvement of water supply Support for obtaining an organisational framework for the local management of water	KFW	2 250 000 000	Western Sahelian Zone	300				2002-2004		Ongoing	
	Village water supply programme of the IX EDF plan	Improvement of water supply Support for obtaining an organisational framework for the local management of water	EU/EDF	35 000 000 000	To be determined	3 300				2003-2008		Funding obtained	
	Saudi project Phase III Chad	Improvement of water supply	Saudi Arabia	3 500 000 000	Sahelian Zone	115				2000-2002		Ongoing	
	Regional Solar Programme	Improvement of water supply Support for obtaining an organisational framework for the local management of water	EU/EDF	3 500 000 000	Western Sahelian Zone		15			2002-2005		Ongoing	
	Chad UNICEF cooperation programme 2001-2005	Improvement of water supply and sanitary conditions											Ongoing
		Promotion of basic sanitation measures											Ongoing
		Capacity building Support for obtaining an organisational framework for the local management of water				Sahelian / Sudanian Zones	400				2001-2005		Ongoing
	Lake Chad development project	Improvement of water supply	ADB	700 000 000	Western Sahelian Zone	100				2002-2005		Starting up	
	Miscellaneous (Esso, NGO, etc.)	Improvement of water supply	Private	3 500 000 000	National	600							Ongoing
	Village water supply programme in Salamat	Improvement of water supply	AFD	1 000 000 000	Sudanian Zone	150				2003-2008			Under discussion
<b>Funding obtained for the construction of new drinking water points</b>						<b>7 180</b>	<b>15</b>	<b>0</b>	<b>450</b>	<b>1999-2008</b>		<b>Funding obtained</b>	

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/achievements				Period	Impacts	Status
						HP <sup>1</sup>	TLU <sup>2</sup>	DWS <sup>3</sup>	Well Reh <sup>4</sup>			
Improvement of village drinking water supply Funding to be found	Village well construction programme in the BET	Improvement of water supply and sanitary conditions Support for obtaining an organisational framework for the local management of water Capacity building	To be found	3 000 000 000	Saharan Zone			150	2005-2010	Project to be defined and funding to be found		
	Drinking water point construction programme in the Ouaddai geographical area	Improvement of water supply and sanitary conditions Support for obtaining an organisational framework for the local management of water Capacity building	To be found	4 200 000 000	Sahelian / Saharan Zones			600	2005-2010	Project to be defined and funding to be found		
	Drinking water point construction programme in the Batha	Improvement of water supply and sanitary conditions Support for obtaining an organisational framework for the local management of water Capacity building	To be found	4 200 000 000	Sahelian / Saharan Zones			600	2005-2010	Project to be defined and funding to be found		
	Drinking water point construction programme in the Guéra	Improvement of water supply and sanitary conditions Support for obtaining an organisational framework for the local management of water Capacity building	To be found	4 200 000 000	Sudanian Zone			600	2005-2010	Project to be defined and funding to be found		
	Drinking water point construction programme in the Logone and Tandjilé	Improvement of water supply and sanitary conditions Support for obtaining an organisational framework for the local management of water Capacity building	To be found	4 200 000 000	Sudanian Zone			600	2005-2010	Project to be defined and funding to be found		
	Drinking water point construction programme in the Moyen-Chari	Improvement of water supply and sanitary conditions Support for obtaining an organisational framework for the local management of water Capacity building	To be found	2 100 000 000	Sudanian Zone			300	2005-2010	Project to be defined and funding to be found		
	Drinking water point construction programme in the Salamat	Improvement of water supply and sanitary conditions Support for obtaining an organisational framework for the local management of water Capacity building	To be found	2 100 000 000	Sudanian Zone			300	2005-2010	Project to be defined and funding to be found		
	<b>Funding to be found for the construction of new drinking supply systems 2005-2010</b>						<b>3 000</b>	<b>0</b>	<b>0</b>	<b>150</b>	<b>2005-2010</b>	<b>Project to be defined and funding to be found</b>

List of programmes as of December 2001

1 Borehole with HP : 7 MFCFAU

2 Basic supply unit borehole and mini distribution network: 50 MFCFAU

3 Drinking water supply system

4 Borehole rehabilitation: 3 MFCFAU

Proposed action plan for village water supply 2000-2010 (contd)

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Strengthening of legal, regulatory and organisational frameworks Capacity building	Support for the creation of local and regional structures for management of drinking water supply systems <i>(Proposed programme may include several phases that will be funded by different funding agencies)</i>	Capacity building for local management of water; the water service and the benefits of productive water	To be found	6 000 000 000	National	A) Training programmes devised and disseminated at all levels: traditional and administrative authorities, users, NGOs, design offices, private companies, craftsmen's networks, etc. B) Training of human resources (managers, engineers, technicians, legal and financial experts, contractors, etc.) in schools, universities and regional centres C) Training of craftsmen, mechanics, electricians, masons, etc. in technical centres D) Development of micro-lending programmes	2003-2010	A) Human resources trained for efficient management of the water service B) Operational user associations C) Role of the State refocused on programming, supervision and regulation activities D) Private companies and craftsmen's networks capable of providing efficient maintenance and servicing of the drinking water supply systems E) Design offices and NGOs capable of providing advice and support to users, to lending agencies and to the Government F) Private national companies capable of building hydraulic structures according to accepted engineering practice G) Civil servants trained in the new role of the State	Project to be defined and funding to be found
	Preparation of reference manuals and guides <i>(Proposed programme may include several phases that will be funded by different funding agencies)</i>	Capacity building for local management of water; the water service and the benefits of productive water  Support for obtaining an organisational framework for the local management of water	To be found	2 000 000 000	National	Preparation and distribution of guides and manuals dealing with sanitation, the participatory approach, management and maintenance of drinking water supply systems, institutional and regulatory aspects of the water sector	2003-2010	Available tools and a structured environment enabling each stakeholder to fulfil his partnership role to the full within the drinking water access chain	Project to be defined and funding to be found
<b>Total amount of funds to be found for support measures in the drinking water field</b>				<b>8 000 000 000</b>					

1 Borehole with HP: 7 MFCFAU

2 Basic supply unit borehole and mini distribution network: 50 MFCFAU

3 Drinking water supply system

4 Borehole rehabilitation: 3 MFCFAU

List of programmes as of December 2001

Proposed action plan for village water supply 2011-2020

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/achievements				Period	Impacts	Status
						HP <sup>1</sup>	BSU	DWS	Well			
Village drinking water supply	Village well construction programme in the BET	Improvement of water supply and sanitary conditions	To be found	2 600 000 000	Saharan Zone		130		2011-2020	Increase in drinking water access rate to 85% of the village population in 2020 Operational and sustainable maintenance network Support for setting up local and regional structures for the management of water supply equipment and the income from productive water Improvement in living and health conditions of the village populations	Project to be defined and funding to be found	
		Strengthening of the organisational framework for local management of water										
		Capacity building										
	Drinking water point construction programme in the Ouaddai geographical area	Improvement of water supply and sanitary conditions	To be found	1 200 000 000	Saharan / Sahelian Zones		1 600		2011-2020			
		Strengthening of the organisational framework for local management of water										
		Capacity building										
	Drinking water point construction programme in the western part of the Sahelian zone	Improvement of water supply and sanitary conditions	To be found	7 700 000 000	Sahelian Zone		1 100		2011-2020			
		Strengthening of the organisational framework for local management of water										
		Capacity building										
	Drinking water point construction programme in the Guéra	Improvement of water supply and sanitary conditions	To be found	2 800 000 000	Sahelian Zone		400		2011-2020			
		Strengthening of the organisational framework for local management of water										
		Capacity building										
Drinking water point construction programme in the Mayo-Kebbi	Improvement of water supply and sanitary conditions	To be found	7 000 000 000	Sudanian Zone		1 000		2011-2020				
	Strengthening of the organisational framework for local management of water											
	Capacity building											
Drinking water point construction programme in the Batha	Improvement of water supply and sanitary conditions	To be found	4 375 000 000	Sahelian Zone		625		2011-2020				
	Strengthening of the organisational framework for local management of water											
	Capacity building											

1 Borehole with hand pump  
2 Reh.: borehole rehabilitation

List of programmes as of December 2001



Proposed action plan for village water supply 2011-2020 (contd)

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/achievements				Period	Impacts	Status
						HP <sup>1</sup>	BSU	DWS	Well			
Village drinking water supply	Drinking water point construction programme in the Moyen-Chari	Improvement of water supply and sanitary conditions Strengthening of the organisational framework for local management of water Capacity building	To be found	7 000 000 000	Sudanian Zone	1 000				2011-2020	Project to be defined and funding to be found	
	Drinking water point construction programme in the landjilé	Improvement of water supply and sanitary conditions Strengthening of the organisational framework for local management of water Capacity building	To be found	5 250 000 000	Sudanian Zone	750				2011-2020	Project to be defined and funding to be found	
	Drinking water point construction programme in the Logone	Improvement of water supply and sanitary conditions Strengthening of the organisational framework for local management of water Capacity building	To be found	11 725 000 000	Sudanian Zone	1 675				2011-2020	Project to be defined and funding to be found	
	Drinking water point construction programme in the Salamat	Improvement of water supply and sanitary conditions Strengthening of the organisational framework for local management of water Capacity building	To be found	1 120 000 000	Sudanian / Sahelian Zones	160				2011-2020	Project to be defined and funding to be found	
<b>Total cost of projects to be funded between 2011 and 2020 in the field of water supply improvement</b>				<b>60 770 000 000</b>		<b>8 310</b>			<b>130</b>			

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/achievements				Period	Impacts	Status
						HP1	BSU	DWS	Well			
Village drinking water Rehabilitation of drinking water points to maintain the supply rate	Borehole rehabilitation programme in the western part of the Sahelian zone	Maintenance of supply rate and improvement of sanitary conditions	To be found	1 505 000 000	Sahelian Zone				430	2011 -2020	Project to be defined and funding to be found	
		Strengthening of the organisational framework for local management of water										
		Capacity building										
	Borehole rehabilitation programme in the Ouaddai geographical area and the Guéra	Maintenance of supply rate and improvement of sanitary conditions	To be found	910 000 000	Sahelian Zone				260	2011 -2020	Project to be defined and funding to be found	
		Strengthening of the organisational framework for local management of water										
		Capacity building										
	Borehole rehabilitation programme in the Mayo-Kebbi	Maintenance of supply rate and improvement of sanitary conditions	To be found	840 000 000	Sudanian Zone				240	2011 -2020	Project to be defined and funding to be found	
		Strengthening of the organisational framework for local management of water										
		Capacity building										
	Borehole rehabilitation programme in the Chari-Baguirmi	Maintenance of supply rate and improvement of sanitary conditions	To be found	430 500 000	Sudanian Zone				123	2011 -2020	Project to be defined and funding to be found	
Strengthening of the organisational framework for local management of water												
Capacity building												
Borehole rehabilitation programme in the Moyen-Chari	Maintenance of supply rate and improvement of sanitary conditions	To be found	1 662 500 000	Sudanian Zone				475	2011 -2020	Project to be defined and funding to be found		
	Strengthening of the organisational framework for local management of water											
	Capacity building											
Borehole rehabilitation programme in the Tandjilé and the Logone	Maintenance of supply rate and improvement of sanitary conditions	To be found	1 925 000 000	Sudanian Zone				550	2011 -2020	Project to be defined and funding to be found		
	Strengthening of the organisational framework for local management of water											
	Capacity building											
<b>Total cost of borehole rehab. projects to be funded in 2011 and 2020</b>						<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2 078</b>		
Support for and strengthening of associations involved in water service management <i>(Proposed programme may include several phases funded by different funding agencies)</i>	Maintenance of supply rate and improvement of sanitary conditions	To be found	3 000 000 000	National							Project to be defined and funding to be found	
	Strengthening of the organisational framework for local management of water											
	Capacity building											
<b>Total funding to be found between 2001 and 2020</b>						<b>71 043 000 000</b>						

List of programmes as of December 2001

1 Borehole with hand pump  
2 Reh.: borehole rehabilitation

### 3 SEMI-URBAN AND URBAN WATER SUPPLY ACTION PLAN

Proposed action plan for semi-urban and urban water supply 2000-2010 and 2011-2020

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Capacity building and strengthening of legal and institutional frameworks	Integrated Plan for Water Development and Management	Strengthening of the legal/regulatory framework	UNDP	For Ref. (Projects accounted for in water resources)	National	A document to serve as a reference for the development and integrated management of water resources Capacity building for the integrated and sustainable management of water resources and exploitation facilities	1998-2002	Setting up methods of approach, tools and action plans to allow the sustainable and integrated development of water resources Strengthened water management capacities	Ongoing
		Support for obtaining an organisational framework for the local management of water							
		Capacity building							
Water Policy Project	Water Policy Project	Strengthening of the legal/regulatory framework	FAC	For Ref. (Projects accounted for in water resources)	National	Institutional and legal frameworks defined Strengthened water management capacities Organisational framework for the management of hydraulic structures defined and operational	1998-2002	Institutional, legal and regulatory environment defined Strengthened water management capacities Operating procedures for management of hydraulic structures and the water service defined	Ongoing
		Support for obtaining an organisational framework for the local management of water							
		Capacity building							
Water Policy Project phase 2	Water Policy Project phase 2	Strengthening of the legal/regulatory framework	FAC	For Ref. (Projects accounted for in water resources)	National	Institutional and legal frameworks defined Strengthened water management capacities	2003-2006	Institutional, legal and regulatory environment defined Strengthened water management capacities Procedures for management of hydraulic structures and water supply service applied	Under discussion
		Support for obtaining an organisational framework for the local management of water							
		Capacity building							
Governance and local management of water	Governance and local management of water	Strengthening of the legal/regulatory framework	UNDP	For Ref. (Projects accounted for in water resources)	National	Setting up of local, regional and national water management structures Knowledge improvement Support for local economic development	2003-2007	Existence of local, regional and national water management capacities Operating procedure for management of hydraulic structures and the water service defined and applied at full scale over an area Replication of management methods Creation of income from water development	Under discussion
		Support for obtaining an organisational framework for the local management of water							
		Capacity building							
<b>Total funds obtained or under discussion concerning the support measures for 2001</b>									

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/achievements				Period	Impacts	Status	
						HP <sup>1</sup>	BSU <sup>2</sup>	DWS <sup>3</sup>	Well Reh <sup>4</sup>				
Improvement of drinking water supply: non-concessionary area	Village water supply programme in the Sudanian zone	Improvement of water supply Support for obtaining an organisational framework for the local management of water	AFD	120 000 000	Sudanian Zone	2				1999-2002	Ongoing		
	Village water supply programme of the 8th EDF plan in Chad	Improvement of water supply Support for obtaining an organisational framework for the local management of water	EU	1 800 000 000	Western Sahelian Zone	30				1999-2004	Ongoing		
	Village water supply programme of the IX EDF plan	Improvement of water supply Support for obtaining an organisational framework for the local management of water	EU/EDF	5 400 000 000	To be determined	90				2003-2008	Funding obtained		
	Saudi project Phase III Chad	Improvement of water supply	Saudi Arabia	120 000 000	Sahelian Zone	2					Ongoing		
	Regional Solar Programme	Improvement of water supply Support for obtaining an organisational framework for the local management of water	E.U.	4 200 000 000	Western Sahelian Zone	70				2002-2005	Starting up		
	Drinking water supply programme for the DLA	Improvement of water supply Support for obtaining an organisational framework for the local management of water	China Taiwan	11 660 000 000	National	19				1999-2003	Ongoing		
	Drinking water supply programme for secondary and semi-urban centres	Improvement of water supply Support for obtaining an organisational framework for the local management of water Capacity building Strengthening of the legal and regulatory framework	AFD	4 260 000 000	Sudanian / Sahelian Zones	43				2002-2005	Ongoing		
	<b>Funding obtained for the construction of new drinking water points in the non-concessionary area</b>						<b>0</b>	<b>237</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>1999-2008</b>	<b>Funding obtained</b>

List of programmes as of December 2001

1 Borehole with hand pump

2 Basic supply unit: borehole and mini distribution network: 60 MFCFAIU

3 DWS network with private connection: 250 MFCFAIU

4 Reh.: borehole rehabilitation

Proposed action plan for semi-urban and urban water supply 2000-2010 and 2011-2020 (contd)

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/achievements			Period	Impacts	Status
						HP <sup>1</sup>	BSU <sup>2</sup>	DWS <sup>3</sup> Well Reh <sup>4</sup>			
	Water and Services Project in the peripheral districts of N'Djaména	Improvement of water supply	AFD	1 325 000 000	N'Djaména	Construction of five mini DWS systems in the periurban districts of N'Djaména	2000-2002	Improvement of water supply to the towns of N'Djaména and Faya	Ongoing		
		Support for obtaining an organisational framework for the local management of water									
		Capacity building									
	Repair of DWS system in Faya	Improvement of water supply	IDB	3 600 000 000	STEE urban centres	Water tower rehabilitation, network extension, construction of latrines	2001-2002	Starting up			
<b>Total amount of physical investments obtained in the concessionary area</b>											
Improvement of drinking water supply: concessionary area	Upgrading / rehabilitation of DWS system of N'Djaména	Improvement of water supply	To be found	4 560 000 000	N'Djaména	Rehabilitation, renewal of water mains, reservoirs, well pumps, 600 connections per year, provision of 23 stand-pipes per year	2001-2010	Project to be defined and funding to be found			
	Extension of DWS system of N'Djaména	Improvement of water supply	To be found	3 550 000 000	N'Djaména	Network extension by 10 to 14 km/year, 900 to 1300 connections per year and 30 stand-pipes per year	2001-2010	Project to be defined and funding to be found			
	Upgrading / rehabilitation of DWS system in other centres conceded to the STEE	Improvement of water supply	To be found	4 270 000 000	STEE urban centres	Rehabilitation, renewal of water mains, reservoirs, well pumps, 200 connections per year, provision of 30 stand-pipes per year	2001-2010	Project to be defined and funding to be found			
	Extension of DWS system in other centres conceded to the STEE	Improvement of water supply	To be found	800 000 000	STEE urban centres	Network extension by 2 to 3 km/year, 200 to 300 connections per year, provision of 10 to 15 stand-pipes per year	2001-2010	Project to be defined and funding to be found			
	Development of self-contained mini DWS systems that could ultimately be linked to the STEE network	Support for obtaining an organisational framework for local management of the water service	To be found	15 750 000 000	STEE urban centres	63	2003-2010	Project to be defined and funding to be found			
	Capacity building and support for local economic development										
	Rehabilitation, upgrading and extension of existing DWS networks	Improvement of urban water supply	To be found	20 000 000 000	STEE urban centres		2003-2010	Project to be defined and funding to be found			
	Capacity building and support for local economic development										
	<b>Funding to be found for physical investments in STEE concessionary area 2003-2010</b>										
							<b>48 930 000 000</b>				

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Capacity building: non-concessionary area	Support for the creation of local and regional structures for management of drinking water supply systems	Capacity building for local management of water; the water service and the benefits of productive water  Support for obtaining an organisational framework for the local management of water	To be found	5 000 000 000	National	A) Training programmes devised and disseminated at all levels: users, NGOs, design offices, private companies, craftsmen's networks, etc. B) Training of human resources	2003-2010	A) Human resources trained for efficient management of the water service B) Operational user associations C) Role of the State refocused on programming, supervision and regulation activities D) Private companies and craftsmen's networks capable of providing efficient maintenance and servicing of the drinking water supply systems	Project to be defined and funding to be found
	Preparation of reference manuals and guides	Capacity building for local management of water; the water service and the benefits of productive water  Support for obtaining an organisational framework for the local management of water	To be found	100 000 000	National	Preparation and distribution of guides and manuals dealing with sanitation, the participatory approach, management and maintenance of drinking water supply systems, institutional and regulatory aspects of the water sector	2003-2010	Available tools and a structured environment enabling each stakeholder to fulfil his partnership role to the full within the drinking water access chain	Project to be defined and funding to be found
Capacity building: concessionary area	Preparation of integrated plans for drinking water supply to the 11 centres of the concessionary area	Improvement of water supply and conditions  Capacity building for local management of water; the water service and the benefits of productive water	To be found	10 000 000 000	Concessionary area	Preparation of an integrated plan for drinking water supply to, and sanitation of, the 11 centres of the concessionary area	2002-2007	Available tools for coherent planning of the actions and investments to be made to ensure drinking water supply to the population in the concessionary area	Project to be defined and funding to be found
	External and internal training programme and assistance for the civil servants responsible for STEE monitoring (Monitoring Committee)	Capacity building	To be found	1 500 000 000	National	A) External training of legal experts, economists and high-level engineers B) Technical assistance programme for making the monitoring committee operational	2003-2005	Trained human resources capable of efficient monitoring of the STEEs and taking decisions in the best interests of the Chad State and the urban populations	Project to be defined and funding to be found
<b>Total investment funding to be found for support measures and training programmes in urban and semi-urban hydraulics</b>				<b>16 600 000 000</b>					

List of programmes as of December 2001

1 Borehole with hand pump  
2 Basic supply unit: borehole and mini distribution network: 60 MFCFAU

3 DW's network with private connection: 250 MFCFAU

4 Reh.: borehole rehabilitation

Proposed action plan for semi-urban and urban water supply 2000-2010 and 2011-2020 (contd)

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/achievements				Period	Impacts	État
						HP <sup>1</sup>	BSU <sup>2</sup>	DWS <sup>3</sup>	Well Reh <sup>4</sup>			
Improvement of drinking water supply: non-concessionary area	Programme for the construction of drinking water supply systems in the BET	Improvement of water supply and sanitary conditions	To be found	300 000 000	Saharan Zone	5			2011-2020		Project to be defined and funding to be found	
		Support for obtaining an organisational framework for the local management of water										
		Capacity building										
	Programme for the construction of basic supply units in the small centres of the Ouaddai geographical area	Improvement of water supply and sanitary conditions	To be found	2 050 000 000	Sahelian / Saharan Zones	30	1		2011-2020		Project to be defined and funding to be found	
		Support for obtaining an organisational framework for the local management of water										
		Capacity building										
	Programme for the construction of basic supply units in the Batha	Improvement of water supply and sanitary conditions	To be found	600 000 000	Sahelian / Saharan Zones	10	0		2011-2020	A) Drinking water supply to 70% of the population in the non-concessionary area by the year 2020	Project to be defined and funding to be found	
		Support for obtaining an organisational framework for the local management of water										
		Capacity building										
	Programme for the construction of water supply and sanitation facilities for the small centres of the Guéra	Improvement of water supply and sanitary conditions	To be found	1 750 000 000	Sahelian Zone	25	1		2011-2020	B) Fair and extensive access to drinking water C) Appropriate water service management by the users in accordance with regulations	Project to be defined and funding to be found	
		Support for obtaining an organisational framework for the local management of water										
		Capacity building										
Programme for the construction of basic supply units in the Logone and Tandjilé	Improvement of water supply and sanitary conditions	To be found	5 850 000 000	Sudanian Zone	85	3		2011-2020		Project to be defined and funding to be found		
	Support for obtaining an organisational framework for the local management of water											
	Capacity building											
Programme for the construction of basic supply units in the western part of the Sahelian zone	Improvement of water supply and sanitary conditions	To be found	800 000 000	Sahelian Zone	5	2		2011-2020		Project to be defined and funding to be found		
	Support for obtaining an organisational framework for the local management of water											
	Capacity building											

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/achievements				Period	Impacts	Status
						HP <sup>1</sup>	BSU <sup>2</sup>	DWS <sup>3</sup>	Well Reh <sup>4</sup>			
Improvement of drinking water supply: non-concessionary area	Programme for the construction of basic supply units in the Mayo-Kebbi	Improvement of water supply and sanitary conditions	To be found	5 300 000 000	Sudanian Zone	80	2		2011-2020	A) Drinking water supply to 70% of the population in the non-concessionary area by the year 2020 B) Fair and extensive access to drinking water C) Appropriate water service management by the users in accordance with regulations	Project to be defined and funding to be found	
		Support for obtaining an organisational framework for the local management of water										
		Capacity building										
Improvement of drinking water supply: concessionary area	Programme for the construction of basic supply units in the Moyer-Chari	Improvement of water supply and sanitary conditions	To be found	2 950 000 000	Sudanian Zone	45	1		2011-2020		Project to be defined and funding to be found	
		Support for obtaining an organisational framework for the local management of water										
		Capacity building										
Improvement of water supply: concessionary area	Programme for the construction of basic supply units in the Salamat	Improvement of water supply and sanitary conditions	To be found	900 000 000	Sudanian Zone	15			2011-2020		Project to be defined and funding to be found	
		Support for obtaining an organisational framework for the local management of water										
		Capacity building										
<b>Funding to be found for the construction of new DWS systems in the non-concessionary area 2011-2020</b>												
						<b>300</b>	<b>10</b>					
Improvement of water supply: concessionary area	Development of self-contained mini DWS systems that could ultimately be linked to the STEE network	Improvement of water supply and sanitary conditions	To be found	15 000 000 000	STEE urban centres		60		2011-2020	A) Drinking water supply to 70% of the resident population of the concessionary area B) Organised and structured water service in the periurban districts of the concessionary area centres C) Economic development centres around the mini DWS systems	Project to be defined and funding to be found	
		Support for obtaining an organisational framework for the local management of water										
		Capacity building										
Improvement of water supply: concessionary area	Connection of mini DWS systems and strengthening of existing DWS systems	Improvement of water supply and sanitary conditions	To be found	12 000 000 000	STEE urban centres			2011-2020	Strengthening and extension of existing DWS systems Connection of mini DWS systems to the STEE network	Project to be defined and funding to be found		
		Support for obtaining an organisational framework for the local management of water										
		Capacity building										
<b>Funding to be found for DWS construction and strengthening in the concessionary area 2011-2020</b>							<b>60</b>					

List of programmes as of December 2001

1 Borehole with hand pump

2 Basic supply unit: borehole and mini distribution network: 60 MFCFAIU

3 DWS network with private connection: 250 MFCFAIU

4 Reh.: borehole rehabilitation



#### 4 PASTORAL WATER SUPPLY ACTION PLAN

##### Proposed action plan for pastoral water supply 2000-2010

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Ongoing or start-up projects	Pastoral water supply project in the Kanem	Distribution of pastoral water supply structures in relation to water requirements of livestock and making allowance for the natural carrying capacity of the pasture land Equipping of migration routes and stock-rearing trade routes with PWP's National capacity building	AFD	4 000 000 000	Western part of Saharan and Sahelian Zones	Construction of 88 PWP's Rehabilitation of 265 PWP's Strengthening of the traditional system for maintaining PWP's Support for pastoral organisations	1999-2003	Migration protection Rational exploitation of the pastoral area Strengthening of stakeholders involved	Ongoing
	Almy Bahim project, phase 2	Distribution of pastoral water supply structures in relation to water requirements of livestock and making allowance for the natural carrying capacity of the pasture land Equipping of migration routes and stock-rearing trade routes with PWP's National capacity building	AFD	4 500 000 000	Eastern part of Saharan, Sahelian and Sudanian Zones	Development of 70 ponds Setting up of PWP management structures Improvement of knowledge on livestock numbers and fodder producing capacities Signposting of moukthals	2000-2003	Migration protection Rational exploitation of the pastoral area Strengthening of stakeholders involved	Ongoing
	Almy Bahim project, phase 3	Distribution of pastoral water supply structures in relation to water requirements of livestock and making allowance for the natural carrying capacity of the pasture land Equipping of migration routes and stock-rearing trade routes with PWP's National capacity building	AFD	7 400 000 000	Sahelian Zone	Development of 80 ponds Construction of 25 pastoral wells Construction of 10 micro-dams Signposting of 1000 km of moukthals	2003-2008	Migration protection Rational exploitation of the pastoral area Strengthening of stakeholders involved	Under discussion
Pastoral water supply projects	IX EDF pastoral water supply project	Distribution of pastoral water supply structures in relation to water requirements of livestock and making allowance for the natural carrying capacity of the pasture land Equipping of migration routes and stock-rearing trade routes with PWP's National capacity building	EDF	6 300 000 000	Sahelian Zone	Rehabilitation of 60 wells Construction of 60 pastoral wells Signposting of moukthals Setting up management structure	2003-2008	Migration protection Rational exploitation of the pastoral area Strengthening of stakeholders involved	Under discussion
	Central Chad Project	Distribution of pastoral water supply structures in relation to water requirements of livestock and making allowance for the natural carrying capacity of the pasture land Equipping of migration routes and stock-rearing trade routes with PWP's National capacity building	AFD/EDF	5 300 000 000	Central part of Saharan, Sahelian and Sudanian Zones	Development of about 100 pastoral water points, including construction of 70 Sahelian ponds and new wells to replace 30 existing wells Rehabilitation of 43 existing structures	2003-2006	Migration protection Rational exploitation of the pastoral area Strengthening of stakeholders involved	Under discussion

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Pastoral water supply Ongoing or start-up projects	Integrated Plan for Water Development and Management	Strengthening of the institutional framework	UNDP	For Ref.	National	A document to serve as a reference for the development and integrated management of water resources Capacity building for integrated and sustainable management of water resources and exploitation facilities	1998-2002	Setting up methods of approach, tools and action plans to allow the sustainable and integrated development of water resources Strengthened water management capacities	Ongoing
		Strengthening of the legal/regulatory framework							
		National capacity building							
	Water Policy Project	Strengthening of the institutional framework	FAC	For Ref.	National	Institutional and legal frameworks defined Strengthened water management capacities Organisational framework for hydraulic structure management defined and operational	1999-2003	Institutional, legal and regulatory environment defined Strengthened water management capacities Operating procedures defined for the management of hydraulic structures and the water service	Ongoing
		Strengthening of the legal/regulatory framework							
		National capacity building							
	Governance and local management of water	Strengthening of the institutional framework	UNDP	For Ref.	National	Installation of monitoring tools and methodologies for integrated water resource management National capacity training Setting up procedures for the management of hydraulic structures on a local, regional and national level; support for local economic development	2003-2006	Integrated water resource management Support for the local management of hydraulic structures and pastoral areas National capacity building	Under discussion
		Strengthening of the legal/regulatory framework							
		National capacity building							
	Water Policy Project phase 2	Strengthening of the institutional framework	FS	For Ref.	National	National capacity building Support for structuring the institutional, legal and regulatory frameworks	2004-2007	Institutional and regulatory framework defined and harmonised. Capacities trained for management of structures and resources	Under discussion
Strengthening of the legal/regulatory framework									
National capacity building									
<b>Total funding obtained for pastoral water supply in 2001</b>				<b>27 500 000 000</b>					

PWP = Pastoral Water Point

List of programmes as of December 2001

Proposed action plan for pastoral water supply 2000-2010 (contd)

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status	
Pastoral water supply Proposals for projects aimed at improving knowledge	Updating livestock numbers and rangeland used for migration	Distribution of pastoral water supply structures in relation to requirements of livestock and pasture land carrying capacities Equipping of trade routes and migration tracks used by the stock-rearers with water points in order to make movement safe	To be found	250 000 000	National	Updated livestock census Inventories of pasture land areas and their interconnections Better knowledge of trans-frontier migration	2000-2010	Basic knowledge improvement Management capacity building Coordination, regulation and channelling of trans-frontier pastoral migrations	Project to be defined and funding to be found	
	Updating pasture land carrying capacities	Distribution of pastoral water supply structures in relation to requirements of livestock and pasture land carrying capacities Equipping of trade routes and migration tracks used by the stock-rearers with water points in order to make movement safe	To be found	250 000 000	National	Maps of the exhaustive inventory of pasture lands, their condition and an assessment of their carrying capacities	2000-2010	Support for planning and programming pastoral water supply structures Sub-sector management support Rational exploitation of pasture lands with due respect for the environment	Project to be defined and funding to be found	
	Inventories of traditional water points: wells, permanent and semi-permanent ponds, etc.	Distribution of pastoral water supply structures in relation to requirements of livestock and pasture land carrying capacities Equipping of trade routes and migration tracks used by the stock-rearers with water points in order to make movement safe	To be found	200 000 000	National	Exhaustive knowledge of livestock drinking points in order to obtain a more accurate assessment of the need for pastoral water points	2000-2010	Planning and coherent programming of the various types of pastoral water supply structures Improvement of knowledge on water resources Enhanced exploitation of pasture lands	Project to be defined and funding to be found	
	Setting up pastoral water supply monitoring tools	Distribution of pastoral water supply structures in relation to requirements of livestock and pasture land carrying capacities Equipping of trade routes and migration tracks used by the stock-rearers with water points in order to make movement safe National capacity building	To be found	150 000 000	National	Establishment of data bases (water points, pasture land, livestock, etc.) coupled with a geographical information system (GIS) Continuous updating and monitoring of basic data and requirements. National personnel trained and capable of using the GIS.	2000-2010	Decision-aid Sub-sector management based on updated, usable, data for coherent planning and programming of actions to be undertaken while always taking into account the environmental aspects	Project to be defined and funding to be found	
	Study and assessment of the impacts of pastoral water supply projects	Distribution of pastoral water supply structures in relation to requirements of livestock and pasture land carrying capacities Equipping of trade routes and migration tracks used by the stock-rearers with water points in order to make movement safe National capacity building	To be found	75 000 000	National	Study of the various pastoral water supply projects carried out and assessment of their impacts, notably on PWP management procedures and on the support given for settling conflicts between migrating and sedentary stock-rearers	2000-2010	Definition of PWP management methodologies and procedures adapted to the various contexts of migrational stock-rearing and to specific regional aspects Support for settling and reducing conflicts	Project to be defined and funding to be found	
	Study and assessment of trans-frontier migration	Distribution of pastoral water supply structures in relation to requirements of livestock and pasture land carrying capacities Equipping of trade routes and migration tracks used by the stock-rearers with water points in order to make movement safe National capacity building	To be found	75 000 000	National	Exhaustive knowledge of livestock entry and exit points in Chad. Development of livestock import and export "ports" equipped with PWPs Better control and monitoring of pastoral migrations and trade flow framing <i>(This study could be carried out within the context of the CBLT)</i>	2000-2010	Coordination and control of trans-frontier migration Improvement of knowledge on livestock trade flows	Project to be defined and funding to be found	
	<b>Total funding to be found to improve basic knowledge</b>				<b>1 000 000 000</b>					

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Pastoral water supply	Construction of pastoral water points	Distribution of pastoral water supply structures in relation to requirements of livestock and pasture land carrying capacities	To be found	5 000 000 000	Saharan Zone	Equipping pasture lands (100 km grid size) and trade routes with about 150 pastoral water points governed by the pasture land carrying capacities and by the actual numbers of livestock	2000-2010	Migration protection Rational exploitation of the pastoral area Setting up PWP management structures adapted to the specific aspects of the environment	Project to be defined and funding to be found
		Equipping of trade routes and migration tracks used by the stock-rearers with water points in order to make movement safe							
		National capacity building							
Pastoral water supply	Development of pastoral water points and signposting of the moukhalis in the eastern and central parts of the Sahelian zone	Distribution of pastoral water supply structures in relation to requirements of livestock and pasture land carrying capacities	To be found	15 000 000 000	Central and eastern part of Sahelian Zone	Construction of a maximum of 350 pastoral wells and development of ponds after having made a detailed study of livestock numbers, carrying capacities and nomad routes and areas	2000-2010	Migration protection Rational exploitation of the pastoral area Setting up PWP management structures adapted to the specific aspects of the environment	Project to be defined and funding to be found
		Equipping of trade routes and migration tracks used by the stock-rearers with water points in order to make movement safe							
		National capacity building							
Proposals for projects aimed at improving livestock access to water	Development of pastoral water points in the western part of the Sahelian zone	Distribution of pastoral water supply structures in relation to requirements of livestock and pasture land carrying capacities	To be found	4 000 000 000	Western Sahelian Zone	Construction of a maximum of 125 pastoral wells after having made a detailed study of livestock numbers and carrying capacities	2000-2010	Migration protection Rational exploitation of the pastoral area Setting up PWP management structures adapted to the specific aspects of the environment	Project to be defined and funding to be found
		Equipping of trade routes and migration tracks used by the stock-rearers with water points in order to make movement safe							
		National capacity building							

PWP = Pastoral water point

List of programmes as of December 2001

## Proposed action plan for pastoral water supply 2000-2010 (contd)

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Pastoral water supply projects aimed at improving livestock access to water	Development of pastoral water points in the Sudanian zone	Distribution of pastoral water supply structures in relation to livestock water requirements, and making allowance for the natural carrying capacity of the pasture lands	To be found	20 000 000 000	Sudanian Zone	Construction of pastoral water wells (about 500) and development of ponds according to requirements and land use	2000-2010	Integrated regional development, especially for the rural areas Prevention of conflicts	Project to be defined and funding to be found
		Equipping of trade routes and migration tracks used by the stock-rearers with water points in order to make movement safe							
Pastoral water supply	Development of pastoral reception areas equipped with PWPs for herd movements in exceptional years	Equipping of trade routes and migration tracks used by the stock-rearers with water points in order to make movement safe	To be found	5 000 000 000	Sudanian Zone	Jointly approved identification of pastoral reception areas for exceptional years Construction of PWPs	2000-2010	Migration protection in exceptionally dry years Concerted regional development and structuring of the environment Prevention of sources of conflict	Project to be defined and funding to be found
		National capacity building							
<b>Total funding to be found to improve livestock access to water</b>				<b>49 000 000 000</b>					

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Proposals for projects of an institutional or regulatory nature	Study of customary laws and existing traditional mechanisms for settling conflicts related to access to water resources	Strengthening of the legal/regulatory framework	To be found	80 000 000	National	Inventory and publication of a "manual" of all customary laws as well as the traditional mechanisms used for settling conflicts between stock-rearers/land farmers in respect of access to and use of water resources.	2000-2010	Pastoral water point management adapted to local contexts Prevention or reduction of sources of conflict Support for promoting local management of pastoral areas	Project to be defined and funding to be found
		Strengthening of the institutional framework							
	Strengthening of the Water Code	Strengthening of the legal/regulatory framework	To be found	30 000 000	National	Definition of the status of migratory stock-rearer Definition and regulation of the concept of access to water for migrating herdsmen, especially in an area of sedentary farming and legal acknowledgement of migration networks.	2000-2010	Water Code adapted to all water uses Prevention of conflicts	Project to be defined and funding to be found
		Capacity building							
Pastoral water supply	Drawing up of the pastoral code	Strengthening of the legal/regulatory framework	To be found	750 000 000	National	<i>Note: The Pastoral Code is part of the regional development framework. It is mentioned in this action plan purely for reference purposes.</i>	2000-2010	Reduction of conflicts Strengthening of institutional, legal and regulatory frameworks Development of rural areas in Chad giving due respect to the environment and specific regional features Promotion of local management of the pastoral area	Project to be defined and funding to be found
		Capacity building							
	External and internal training programme and by means of technical assistance for the civil servants, association stakeholders, and the private sector involved in the pastoral field	Capacity building (programme that can be broken down into several phases)	To be found	700 000 000	National	High-level training, both internal and external, of engineers, economists, technicians, pastoralism specialists, etc. Technical assistance programme to support the stock-rearing field. Training programme to support pastoral organisations and local management of pastoral areas	2000-2010	Trained human resources capable of providing efficient management and monitoring of stock-rearing.	Project to be defined and funding to be found
<b>Total funding to be found for national capacity building and for strengthening the legal and regulatory framework</b>				<b>1 560 000 000</b>					

PWP = Pastoral water point

List of programmes as of December 2001

Proposed action plan for pastoral water supply 2011-2020

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Improvement of access to pastoral water	Development of PWP	Repair of pastoral water supply structures according to livestock needs and pastoral carrying capacities	To be found	7 000 000 000	Saharan	Development of 400 PWPs Creation of management structures adapted to the environment	2011-2020	Promote the use of arid rangeland in sectors endowed with the best fodder resources Operational management structures	Project to be defined and funding to be found
		Equipping stock-rearers' trading and migration routes with water points to make migration movements safe							
		National capacity building							
Improvement of access to pastoral water	Development of PWP	Repair of pastoral water supply structures according to livestock needs and pastoral carrying capacities	To be found	10 000 000 000	Sahelian	Development of 500 PWPs Creation of management structures adapted to the environment and to specific regional features	2011-2020	Strengthen seasonal pastoral movements by doubling up the lines of wells installed along the moukhal Operational PWP management structures	Project to be defined and funding to be found
		Equipping stock-rearers' trading and migration routes with water points to make migration movements safe							
		National capacity building							
Improvement of access to pastoral water	Development of PWP and pastoral reception areas	Repair of pastoral water supply structures according to livestock needs and pastoral carrying capacities	To be found	15 000 000 000	Sudanian	Development of 600 PWPs by doubling up the moukhal Development of more pastoral reception areas on the basis of consultations between all stakeholders concerned	2011-2020	Strengthen seasonal pastoral movements Operational PWP management structures Reduction of conflicts	Project to be defined and funding to be found
		Equipping stock-rearers' trading and migration routes with water points to make migration movements safe							
		National capacity building							
Monitoring of pastoral hydraulics and capacity building	Maintain and update the data base and GIS	Repair of pastoral water supply structures according to livestock needs and pastoral carrying capacities	To be found	55 000 000	National	Continuous updating and monitoring of basic data and besoins National personnel trained and capable of using the GIS	2011-2020	Management based on up-to-date, exploitable data in order to be able to plan and draw up coherent schedules of measures to be taken while making due allowance for environmental aspects	Project to be defined and funding to be found
		Equipping stock-rearers' trading and migration routes with water points to make migration movements safe							
		National capacity building							
Monitoring of pastoral hydraulics	External and internal training programme and by means of technical assistance for the civil servants, association stakeholders, and the private sector involved in the pastoral field	National capacity building	To be found	500 000 000	National	Training of managerial staff, pastoral organisations Technical assistance programme	2011-2020	Trained human resources capable of providing efficient management and monitoring of stock-rearing	Project to be defined and funding to be found
<b>Total funding to be found for pastoral water supply between 2011 and 2020</b>				<b>32 555 000 000</b>					

PWP = Pastoral water point

List of programmes as of December 2001

## 5 AGRICULTURAL WATER SUPPLY ACTION PLAN

### Proposed action plan for agricultural water supply 2000-2020

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Agricultural water supply: ongoing or start-up projects	Mamdi project (Sodelac)	Rational and sustainable exploitation of the soil potential	ADB/ADF IDB/BADEA/ GVT.	25 000 000 000	Sahelian Zone	Construction of irrigation networks over an area of 1800 ha	1998-2003	Contribution to food security and strengthening of peasant organisations	Ongoing
		Development of a policy for farmer training and organisation				Construction of a drainage network			
	Doum-Doum development project (Sodelac)	Rational and sustainable exploitation of the soil potential	3 000 000 000	Sahelian Zone	Construction of dams	1998-2003	Contribution to food security and strengthening of peasant organisations	Ongoing	
		Development of a policy for farmer training and organisation			Development of wadis		Supply of agricultural equipment		
	Rural development project for the Lake (Sodelac)	Rational and sustainable exploitation of the soil potential	18 000 000 000	Sahelian Zone	Development of 13 polders	1998-2003	Contribution to food security and strengthening of peasant organisations	Ongoing	
		Development of a policy for farmer training and organisation			Construction of schools		Construction of public health centres		
	Rural development project for the subprefecture of N'Gouri (Sodelac)	Rational and sustainable exploitation of the soil potential	7 000 000 000	Sahelian Zone	Development of 1000 ha of wadis	2002-2007	Contribution to food security and strengthening of peasant organisations	Starting up	
		Development of a policy for farmer training and organisation			Supply of agricultural equipment		Construction of economic infrastructure (roads, schools, public health centres)		Integrated development of rural areas
	Natural resources management project in the Sudanian zone	Rational and sustainable exploitation of the soil potential	18 700 000 000	Sudanian Zone	Organisation and empowerment of producers	2002-2007	Contribution to food security and strengthening of peasant organisations	Starting up	
		Development of a policy for farmer training and organisation			Development of infrastructure		Rehabilitation of 2 500 ha		Construction of 210 km of protective embankments
Project for making productive use of runoff water	Rational and sustainable exploitation of the soil potential	11 434 000 000	Sahelian Zone	Construction of 143 km of rural tracks	1999-2006	Contribution to food security and strengthening of peasant organisations	Ongoing		
	Development of a policy for farmer training and organisation			Development of 586 ha of land by the construction of 10 dams and 156 wells for market-gardening		Organisational support for producers		Integrated development of rural areas	Improved access to production areas

List of programmes as of December 2001



Proposed action plan for agricultural water supply 2000-2020 (contd)

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
	Rural development project in Biline	Rational and sustainable exploitation of the soil potential	ADB/ADF	1 1 640 000 000	Sahelian / Saharan Zones	Development of 10 catchment areas, six irrigation areas, and 30 wells for market-gardening	2002-2007	Contribution to food security and strengthening of peasant organisations Integrated development of rural areas Improved access to production areas	Starting up
		Development of a policy for farmer training and organisation				Construction of 50 km of rural tracks			
		Rehabilitation of existing facilities				Improvement of 25 000 ha of rain-fed cropping, 300 ha of irrigated cropping and 700 ha of flood-recession cropping			
	Special programme for food security	Rational and sustainable exploitation of the soil potential	FAO/IDB	787 568 373	Sahelian / Saharan Zones	Water control aspect	2002-2005	Contribution to food security and strengthening of peasant organisations Integrated development of rural areas Improved access to production areas	Ongoing
		Development of a policy for farmer training and organisation				Constraint analysis aspect Development of irrigation areas, lowland schemes, introduction of suitable technologies			
Agricultural water supply: ongoing or start-up projects	Integrated development project of the BET	Rational and sustainable exploitation of the soil potential	IDB	2 230 000 000	Saharan Zone	Irrigation and drainage development works for 200 ha of palm groves	2002-2004	Contribution to food security	Starting up
		Development of a policy for farmer training and organisation				Construction of 12 boreholes for water supply			
	Feasibility study for an integrated rural development project in Cameroon/Chad	Rational and sustainable exploitation of the soil potential	IDB/CBLT	300 000 000	Sudanian Zone	Development of 2500 ha of irrigated crops	2001-2002	Knowledge improvement Contribution to food security Capacity building	Ongoing
Development of a policy for farmer training and organisation	Implementation of a regional development policy								
	Rehabilitation of the "C" polders	Rational and sustainable exploitation of the soil potential	Taiwan	1 300 000 000	Sudanian Zone	Rehabilitation of 500 ha of "C" polders	2002-2005	Contribution to food security and to the rational operation of existing facilities	Starting up
		Development of a policy for farmer training and organisation							
		Rehabilitation of existing facilities							
<b>Total funding obtained and under discussion 2000 to 2010</b>				<b>99 391 568 373</b>					

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Agricultural water supply: Proposed schemes	Rural development of Liwa	Rational and sustainable exploitation of the soil potential Development of a policy for farmer training and organisation	To be found	300 000 000	Sahelian Zone	Study of the integrated development of the Liwa sub-prefecture	2000-2010	Contribution to food security and strengthening of peasant organisations Integrated development of rural areas Improved access to production areas	Project to be defined and funding to be found
	Creation of small-scale village irrigation schemes	Rational and sustainable exploitation of the soil potential Development of a policy for farmer training and organisation	To be found	12 000 000 000	Sudanian Zone	Development of 2000 ha of small-scale village irrigation schemes	2000-2010	Support for local development local and food security	Project to be defined and funding to be found
	<b>Total funding to be found for agricultural water supply between 2000 and 2010</b>			<b>12 300 000 000</b>					

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Proposed action plan for agricultural water supply 2000-2020 (contd)

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status	
Agricultural water supply: Knowledge improvement, support for planning, capacity-building and sector structuring	Study of defluence channel operation and restorative potential of the productive potential of natural flood-spreading on the Chari-Logone plain	Rational and sustainable exploitation of the soil potential Rehabilitation of existing facilities Development of a farmer training and organisation policy	To be found	175 000 000	Sudanian Zone	Assessment of the operating condition of drainage channels Technical recommendations for improving their operation and optimising their use	2000-2020	Knowledge improvement National capacity building	Project to be defined and funding to be found	
	Exhaustive inventories of lowlands	Rational and sustainable exploitation of the soil potential Development of a farmer training and organisation policy	To be found	250 000 000	Sudanian Zone	Definition of typology their development Definition of the terms of reference for a feasibility study for operating a pilot project	2000-2010	Up-to-date knowledge of the soil potential in Chad	Project to be defined and funding to be found	
	Management of a pilot project for lowland development	Rational and sustainable exploitation of the soil potential Development of a farmer training and organisation policy	To be found	3 000 000 000	Sudanian Zone	Full-scale development for exploiting lowlands Recommendations for continuing this type of operation	2010-2020	Improvement of knowledge on lowland farming techniques Contribution to food security	Project to be defined and funding to be found	
	Preparation and implementation of a programme for building irrigation and drainage schemes with total control of water	Rational and sustainable exploitation of the soil potential Development of a farmer training and organisation policy Rehabilitation of existing facilities	To be found	10 000 000 000	National	Construction of schemes for the irrigation and drainage of 5000 ha of land Support for and training of Peasant Organisations Construction of rural tracks Training of personnel	2000-2020	Contribution to food security Integrated development of rural areas Strengthening of peasant organisations Improved access to production areas	Project to be defined and funding to be found	
	Preparation and implementation of a programme for building irrigation and drainage schemes for flood-recession, catchment and small-scale village irrigation areas	Rational and sustainable exploitation of the soil potential Development of a farmer training and organisation policy Rehabilitation of existing facilities	To be found	83 870 000 000	National	Construction of development schemes for the irrigation and drainage of 100 000 ha of land Support for and training of Peasant Organisations Construction of rural tracks Training of personnel	2000-2020	Contribution to food security Integrated development of rural areas Strengthening of peasant organisations Improved access to production areas	Project to be defined and funding to be found	
	Preparation and implementation of stakeholder training plans	Development of a farmer training and organisation policy	To be found	2 000 000 000	National	Definition and implementation of training plans for personnel belonging to the Administration, Peasant Organisations, private operators, local populations and associations	2000-2020	Strengthening of stakeholders involved Support for sector organisation and structuring Increase in productivity Contribution to food security	Project to be defined and funding to be found	
	Drawing up a Rural Code	Legal and regulatory strengthening	To be found	750 000 000	National	<i>For Reference:</i> The Rural Code must be an integral part of overall regional development and in harmony with the Pastoral Code	2000-2020	Strengthening of institutional, legal and regulatory frameworks Development of rural areas in Chad while respecting the environment and specific regional aspects Promotion of local management of rural areas	Project to be defined and funding to be found	
	<b>Total funding to be found between 2000 and 2020</b>				<b>100 045 000 000</b>					

List of programmes as of December 2001

## 6 WATER RESOURCES ACTION PLAN

### Proposed action plan in the water resources field 2000-2020

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Regulatory and institutional frameworks	Regional strategies exploiting the Nubian Sandstone aquifer	Improvement of knowledge concerning water resources	FIDA/CEDARE	750 000 000	Regional (Chad, Libya, Sudan, Egypt)	Planning tools and documents for the management and sustainable exploitation of the Nubian Sandstone aquifer	2000-2003	Integrated management of shared water resources	Ongoing
		Capacity building				Capacity training			
	Water Policy Project	Strengthening of the legal/regulatory framework	FAC	500 000 000	National	Institutional and legal frameworks defined	1998-2002	Institutional, legal and regulatory environment defined	Ongoing
		Support for obtaining an organisational framework for the local management of water				Strengthened water management capacities			
		Capacity building				Organisational framework for hydraulic structure management defined and operational			
	Integrated Plan for water development	Strengthening of the legal/regulatory framework	UNDP	1 500 000 000	National	An approved document to serve as a reference for the development and integrated and sustainable management of water resources	1998-2002	Integrated and sustainable management of water resources and the facilities for their mobilisation and exploitation	Ongoing
		Capacity building				National capacity building			
		Improvement of knowledge concerning water resources							
		Integrated management of water resources and aquatic ecosystems							
	Water Policy Project phase 2	Strengthening of the legal/regulatory framework	FAC	1 000 000 000	National	Institutional and legal frameworks defined		Institutional, legal and regulatory environment defined	Under discussion
Support for obtaining an organisational framework for the local management of water		Strengthened water management capacities							
Capacity building		Procedures for management of hydraulic structures and water supply service applied							
Governance and local management of water	Strengthening of the legal/regulatory framework	UNDP	1 875 000 000	National	Setting up of local, regional and national water management structures		Existence of local, regional and national water management capacities	Under discussion	
	Support for obtaining an organisational framework for the local management of water				Knowledge improvement				
	Capacity building				Support for local economic development				
<b>Funding obtained and under discussion for institutional and regulatory frameworks and knowledge improvement</b>				<b>5 625 000 000</b>					

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Proposed action plan in the water resources field 2000-2020 (contd)

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status	
Surface water	Fisheries master plan	Improvement of knowledge concerning water resources Integrated management of water resources and aquatic ecosystems	ADB	750 000 000	National	A document and tools for the sustainable exploitation of fisheries resources	2001-2003	Contribution to food security and to economic development	Ongoing	
	Enhancement of the measurement network and hydrological studies per event for local development (agricultural and pastoral)	Improvement of knowledge concerning water resources Capacity building Integrated management of water resources and aquatic ecosystems	To be found	250 000 000	Saharan Zone	Installation of appropriate facilities for monitoring surface water flows in the Saharan zone Training of national technicians and local personnel	2000-2010	A) Operational measurement system for collecting basic data on Saharan hydrology B) National personnel trained in the installation and monitoring of measuring equipment	Project to be defined and funding to be found	
	Enhancement of the measurement and monitoring network for lakes and flood flows, targeting local economic development in particular	Improvement of knowledge concerning water resources Capacity building Integrated management of water resources and aquatic ecosystems	To be found	200 000 000	Sahelian Zone	Rehabilitation of existing facilities Installation of new facilities Training of national technicians and local personnel	2000-2010	A) Operational measurement system for permanent monitoring of the operation of Lakes Chad and Fitri, the wadis as well as the catchment areas of eastern Chad B) National personnel trained in the installation and monitoring of measuring equipment	Project to be defined and funding to be found	
	Enhancement of the measurement and monitoring network for the surface water of the Chari-Logone and Mayo-Kebbi basins	Improvement of knowledge concerning water resources Capacity building Integrated management of water resources and aquatic ecosystems	To be found	200 000 000	National	Carrying out hydrological studies of the various surface hydrosystems Training of national personnel	2000-2010	A) Knowledge of the main characteristics and operation of the surface hydrosystems and their relationships with aquifers B) Support for the sustainable exploitation and management of water resources C) Training of national personnel capable of conducting and monitoring water resources studies	Project to be defined and funding to be found	
	Preparation of an integrated plan for the Chari-Logone basin and its flood-prone areas	Capacity building Integrated management of water resources and aquatic ecosystems	To be found	2 000 000 000	Sahelian / Sudanian Zones	Documents and tools for the management of surface water resources in the Chari-Logone basin, reconciling economic development and protection of the environment	2000-2010	A) Sustainable development of flood-prone areas B) Flood control C) Support for the agricultural sector and for food security D) Biodiversity conservation E) Contribution to economic development	Project to be defined and funding to be found	
	Strengthening and operationalisation of the flood warning service	Improvement of knowledge concerning water resources Integrated management of water resources and aquatic ecosystems Capacity building	To be found	100 000 000	Sahelian / Sudanian Zones	Structures and equipment for forecasting floods in the flood plains and areas around lake shores subject to temporary flooding as well as for Lake Chad and Lake Fitri and also for riparian towns, especially N'Djaména	2000-2010	A) Flood risk forecasting B) Support for the agricultural sector and for food security C) Contribution to civil protection	Project to be defined and funding to be found	
	Assessment study of damage to the river banks and their development	River water management Integrated management of water resources and aquatic ecosystems	To be found	500 000 000	Sahelian / Sudanian Zones	Identification of zones or areas to be developed and the infrastructure to be established	2000-2010	A) Flood prevention B) Biodiversity conservation C) Improvement of local navigability D) Contribution to economic development	Project to be defined and funding to be found	
	<b>Funding obtained and to be found for surface water studies</b>				<b>4 000 000 000</b>					

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Surface water and groundwater	Preparation of standards for abstraction of water resources for drinking, agricultural and industrial uses Preparation of outfall standards	Integrated management of water resources and aquatic ecosystems	To be found	100 000 000	National	Definition of standards for abstracting volumes of water from surface resources and major aquifer systems (These standards must be defined in collaboration with the CBLT with regard to shared water resources)	2000-2010	A) Sustainable development of water resources B) Strengthened regulatory framework C) Conservation of the biodiversity	Project to be defined and funding to be found
		Capacity building							
		Strengthening of regulatory framework							
	Setting up of methodologies and procedures for assessing impacts prior to the implementation of infrastructure development projects	Integrated management of water resources and aquatic ecosystems	To be found	250 000 000	National	Writing of a regulatory "methodological guide" for assessing the impacts of all infrastructure construction projects on water resources and on the environment in general	2000-2010	A) Provision of tools, methodologies and processes to decision-makers in order to be able to define the "added value" of any investment having impacts on water resources and on the environment in general B) Decision-aid C) Better defined regulatory framework D) Contribution to harmonious economic development	Project to be defined and funding to be found
		Capacity building							
		Strengthening of regulatory framework							
	Hydrological and hydrogeological studies of the mountainous catchment area in eastern Chad	Improvement of knowledge concerning water resources	To be found	500 000 000	Sahelian Zone	Studies on rainfall, surface flows and runoff, infiltration, evapotranspiration, soils, vegetation, as well as the dimension of catchment areas Development proposals taking into account the impacts on the supply of groundwater aquifers and water points operated downstream of catchment areas	2000-2010	A) Better knowledge of water resources and the operation of mountainous catchment areas B) Development of catchment areas on the basis of reliable, up-to-date data	Project to be defined and funding to be found
		Capacity building							
		Improvement of knowledge concerning water resources							
	Setting up a water quality control and monitoring structure	Improvement of knowledge concerning water resources	To be found	250 000 000	National	Regular monitoring of the quality of surface water and the resources in major aquifers, notably those exploited for agricultural and drinking water supply	2000-2010	A) Prevention of contamination risks of various origins B) Prevention and management of health risks for humans and animals C) Support for biodiversity conservation	Project to be defined and funding to be found
Integrated management of water resources and aquatic ecosystems									
Capacity building									
<b>Funding to be found</b>			<b>1 100 000 000</b>						

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Proposed action plan in the water resources field 2000-2020 (contd)

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Groundwater	Updating of the hydrogeological map of Chad	Improvement of knowledge concerning water resources	To be found	400 000 000	Sahelian / Sudanian Zones	General hydrogeological map of Chad to a scale of 1:1 000 000, established from processing new data obtained from different projects and programmes	2000-2010	<p>A) Provision of basic tools for the sustainable development of groundwater</p> <p>B) Aids for decision-making and for defining and planning programmes</p> <p>C) Support for economic development of Chad</p>	Project to be defined and funding to be found
		Integrated management of water resources and aquatic ecosystems							
		Capacity building							
	Studies of groundwater potential in the basement zones of eastern Chad	Improvement of knowledge concerning water resources	To be found	1 000 000 000	Sahelian / Saharan Zones	<p>Analysis and assessment of groundwater potential on the basis of a literature survey, the results of water point construction programmes, processing of satellite imagery, geological and hydrogeological surveys and exploratory boreholes, etc.</p> <p>Recommendations for the location and exploitation (water abstraction) of water points</p> <p>Definition of mechanisms and relations between surface water and groundwater resources</p> <p>Definition of priorities in the use of groundwater resources</p>	2000-2010	<p>A) Support for defining and planning groundwater exploitation programmes</p> <p>B) Sustainable management and exploitation of groundwater resources in the basement zone</p> <p>C) National personnel trained in the identification and management of groundwater resources in the basement zone</p> <p>D) Decision-aid for regional development</p> <p>E) Assistance in preventing aquifer pollution</p> <p>F) Support for regional economic development</p>	Project to be defined and funding to be found
		Capacity building							
		Improvement of knowledge concerning water resources							
Updating of the hydrogeological map of the Southern Continental Terminal	Improvement of knowledge concerning water resources	To be found	800 000 000	Sudanian Zone	<p>Analysis of existing data</p> <p>Hydrogeological map of the Southern Continental Terminal</p> <p>Establishment of a aquifer recharge mechanisms and interrelations with surface water resources and deep tectonic fossil aquifers</p>	2000-2010	<p>A) Knowledge of the potential and main characteristics of the Continental Terminal aquifer</p> <p>B) Support in planning exploitation programmes of the Southern Continental Terminal aquifer</p> <p>C) Sustainable management and exploitation of the Southern Continental Terminal aquifer</p> <p>D) Decision-aid</p> <p>E) Assistance in preventing aquifer pollution</p>	Project to be defined and funding to be found	
	Integrated management of water resources and aquatic ecosystems								
	Capacity building								
Studies of groundwater potential in the Northern Continental Terminal aquifer	Improvement of knowledge concerning water resources	To be found	800 000 000	Sahelian / Saharan Zones	<p>Assessment of groundwater potential based on existing data, processing of satellite imagery and geological, hydrogeological and geophysical surveys</p> <p>Recommendations for the location and exploitation (water abstraction) of water points</p> <p>Definition of mechanisms and relations between surface water and groundwater resources, etc.</p>	2000-2010	<p>A) Support for defining and planning groundwater exploitation programmes</p> <p>B) Sustainable management and exploitation of groundwater resources in the basement zone</p> <p>C) National personnel trained</p> <p>D) Assistance in preventing aquifer contamination</p> <p>E) Decision-aid for regional development</p>	Project to be defined and funding to be found	
	Capacity building								
	Improvement of knowledge concerning water resources								

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Groundwater	Hydrogeological studies of the multi-layer aquifer systems of the Chad basin	Improvement of knowledge concerning water resources	To be found	1 000 000 000	Sahelian Zone	Determination of the main characteristics of each aquifer Establishment of the relations between the various aquifers, on one hand, and surface water resources on the other Assessment of the potential and quality of each aquifer <i>Note: This programme must be carried out in close collaboration with the CBLT</i>	2000-2010	A) Sustainable management and exploitation of the multi-layer aquifer systems of the Chad basin B) Support for planning water exploitation programmes in the Chad basin C) National personnel trained D) Contribution to economic development of the Sahelian zone E) Assistance in preventing aquifer pollution F) Support for regional economic development	Project to be defined and funding to be found
		Capacity building							
	Studies of the artificial recharge potential of alluvial deposits	Improvement of knowledge concerning water resources	To be found	225 000 000	Saharan Zone	Carrying out works and studies to establish the recharge potential of alluvial deposits in the valleys of the BET	2000-2010	A) Knowledge of the recharge potential of alluvial deposits B) Support for defining and planning groundwater exploitation programmes C) Sustainable management and exploitation of groundwater	Project to be defined and funding to be found
		Capacity building							
Strengthening of the national piezometric network	Improvement of knowledge concerning water resources	Integrated management of water resources and aquatic ecosystems	To be found	500 000 000	National	Installation of a national piezometry network including the topographical levelling of observation points Training of monitoring personnel	2000-2010	A) Sustainable monitoring, management and exploitation of groundwater B) Improvement of knowledge on the operation and recharge mechanisms of the major aquifers C) National personnel trained in aquifer monitoring D) Prevention of groundwater contamination	Project to be defined and funding to be found
		Capacity building							
Studies of artesian wells in the Borkou	Improvement of knowledge concerning water resources	Integrated management of water resources and aquatic ecosystems	To be found	50 000 000	Saharan Zone	Assessment-diagnosis of artesian wells in the Borkou Determination of zones of artesian activity Preparation of standards relating to the exploitation of artesian wells	2000-2010	A) Support for the sustainable management and exploitation of aquifers B) Improvement of knowledge on water resources C) Support for defining the regulatory framework	Project to be defined and funding to be found
		Capacity building							

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Proposed action plan in the water resources field 2000-2020 (contd)

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Groundwater	Studies of the potential of the deep aquifers in the tectonic trenches	Improvement of knowledge concerning water resources	To be found	1 000 000 000	Sudanian Zone	Identification and delimitation of these aquifers Definition of their characteristics, their interactions with the other aquifer systems and their recharge mechanisms Assessment of their potential	2000-2010	A) Improvement of knowledge concerning water resources B) Training of national personnel C) Support for the sustainable management and exploitation of groundwater resources	Project to be defined and funding to be found
		Capacity building							
	Studies of groundwater emergence zones in the BET (springs)	Improvement of knowledge concerning water resources	To be found	100 000 000	Saharan Zone	Study of the potential of springs, their recharge mechanisms and their exploitation potential	2000-2010	A) Improvement of knowledge concerning groundwater resources in the Saharan zone B) Support for the sustainable management and exploitation of water resources C) Training of national personnel D) Contribution to the economic development of the Saharan zone	Project to be defined and funding to be found
Capacity building Integrated management of water resources and aquatic ecosystems									
Assessment of the potential of the Paleozoic Sandstone and marine Carboniferous aquifers	Improvement of knowledge concerning water resources	To be found	1 000 000 000	Saharan Zone	Improvement of knowledge of their main characteristics and their productivity potential Determination of interactions between aquifer systems Recommendations for measures to ensure sustainable exploitation of these resources	2000-2010	A) Improvement of knowledge concerning groundwater resources in the Saharan zone B) Support for the sustainable management and exploitation of water resources C) Training of national personnel D) Contribution to the economic development of the Saharan zone	Project to be defined and funding to be found	
	Capacity building Integrated management of water resources and aquatic ecosystems								
<b>Funding obtained and to be found for groundwater</b>				<b>6 875 000 000</b>					

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Capacity training	External and internal training programme and by means of technical assistance for the civil servants, association stakeholders, and the private sector involved in the pastoral field	Capacity building	To be found	500 000 000	National	A) High-level training, both internal and external, of engineers, economists, technicians, water management specialists, hydrogeologists, etc. B) Technical assistance programme to support the integrated development of water resources	2000-2010	Trained human resources capable of efficient management and exploitation of water resources	Project to be defined and funding to be found
	Strengthening of the Water Office's data base	Capacity building Integrated management of water resources and aquatic ecosystems	To be found	350 000 000	National	Centre equipped with the necessary facilities for collecting, processing and editing up-to-date documents on water resources	2000-2010	Operational resource monitoring system, capable of providing decision-aids for regional development	Project to be defined and funding to be found
Water resources and oil extraction	<b>Capacity-building funding to be found</b>			850 000 000					
	Study and implementation of a warning system for pollution from accidental oil spills	Improvement of knowledge concerning water resources Integrated management of water resources and aquatic ecosystems	To be found	1 000 000 000	Sudanian/Sahelian Zones	Emergency plan available in the event of accidental pollution due to oil exploitation	2000-2010	Preservation of human health and environmental biodiversity	Project to be defined and funding to be found
	Capacity training plan for monitoring oil exploitation and its potential impact on water resources and on the environment in general	National capacity building	To be found	1 500 000 000	National	Training of engineers, technicians legal experts, managers, national environmental specialists		Trained human resources capable of efficient monitoring of oil exploitation and its possible impact on water resources and on the environment in general	Project to be defined and funding to be found
	<b>Funding to be found</b>			<b>2 500 000 000</b>					

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## 7 SANITATION ACTION PLAN

### Proposed action plan for sanitation 2000-2010

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status	
Rural sanitation	Village water supply programme in the Ouaddaï/Bilime	Promotion of basic village sanitation measures Capacity building	KFW/AFD/EU	500 000 000	Eastern Sahelian Zone	Construction of about 12 000 improved traditional latrines Dissemination of health education programmes Local capacity building	2002-2005	Improvement of sanitation conditions for village populations Local capacities trained and capable of applying elementary sanitation measures	Ongoing	
	Preparation of a "guide" on basic sanitation techniques in a rural environment	Promotion of basic village sanitation measures Capacity building Strengthening of legal and regulatory framework	To be found	50 000 000	National	Manuals and practical reference guides dealing with basic sanitation techniques in a village environment	2000-2010	Tools and methodologies contributing to village sanitation placed at the disposal of all stakeholders involved	Project to be defined and funding to be found	
	Development of basic sanitation infrastructure in a rural environment (latrines, wastewater collection) <i>(These schemes could form one segment of the village water supply programmes)</i>	Promotion of basic village sanitation measures Capacity building	To be found	5 000 000 000	National	Development of basic infrastructure in the villages Dissemination of health education programmes among the village populations	2000-2010	Improvement of sanitation conditions for village populations Local capacities trained and capable of applying elementary sanitation measures	Project to be defined and funding to be found	
	Preparation and dissemination of information and awareness-raising programmes on sanitation and the links between water, hygiene and health	Promotion of basic village sanitation measures Capacity building	To be found	1 000 000 000	National	Village populations made aware of, educated and trained in basic hygienic practices	2000-2010	Improvement of sanitation conditions for village populations	Project to be defined and funding to be found	
	Training programme for craftsmen on construction techniques for basic sanitation facilities	Promotion of basic village sanitation measures Capacity building	To be found	500 000 000	National	Craftsmen capable of building and developing basic sanitary infrastructure	2000-2010	Improvement of sanitation conditions for rural populations Development of income-generating activities	Project to be defined and funding to be found	
	<b>Total funding obtained and to be found for village sanitation for 2000-2010</b>			<b>7 050 000 000</b>						

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Urban and semi-urban sanitation	Stormwater drainage	Progressive equipping of urban centres with sanitation infrastructure Capacity building	AFD	4 500 000 000	N'Djaména, Moundou, Sarh,	Construction of stormwater sewer outfalls	2001-2005		Ongoing
	Programme for the construction of public latrines in the four biggest towns in Chad	Progressive equipping of urban centres with sanitation infrastructure Capacity building	To be found	300 000 000	N'Djaména, Moundou, Sarh, Abeche	Construction of latrines in public centres	2003-2010		Project to be defined and funding to be found
	Construction of secondary and tertiary stormwater collectors in the four biggest towns in Chad	Progressive equipping of urban centres with sanitation infrastructure Capacity building	To be found	7 000 000 000	N'Djaména, Moundou, Sarh, Abeche	Construction of stormwater drainage networks	2003-2010	A) Sanitised living environment B) Improvement in the state of health of urban populations C) Development of local and national capacities in the sanitation field	Project to be defined and funding to be found
	Development of private cesspits for wastewater	Progressive equipping of urban centres with sanitation infrastructure Capacity building	To be found	200 000 000	N'Djaména, Moundou, Sarh, Abeche	Households provided with basic sanitation infrastructure in compliance with recognised standards	2003-2010	D) Support for the private sector E) Development of income-generating activities F) Protection of the environment	Project to be defined and funding to be found
	Setting up of a waste collection system	Progressive equipping of urban centres with sanitation infrastructure Capacity building	To be found	300 000 000	National	Setting up of an urban waste removal system	2003-2010		Project to be defined and funding to be found
	Training of human resources in sanitation at all levels (administration, civil society, sanitation engineers and technicians, managers, etc.)	National capacity building	To be found	4 000 000 000	National	Human resources trained in all aspects of sanitation	2000-2010		Project to be defined and funding to be found

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## Proposed action plan for sanitation 2000-2010 (contd)

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status	
Urban and semi-urban sanitation	Preparation of "sanitation standards" especially for industrial effluent and in a regulatory framework adapted to the context of Chad	Strengthening of the legal/regulatory framework	To be found	1 000 000 000	National	Precise regulatory framework	2003-2005	A) Sanitised living environment B) Improvement in the state of health of urban populations C) Development of local and national capacities in the sanitation field	Project to be defined and funding to be found	
		National capacity building								
	Studies of potential sites for the disposal of urban waste	Progressive equipping of urban centres with sanitation infrastructure	Capacity building	To be found	580 000 000	Urban centres	Recognised sites complying with urban waste dumping standards	2003-2010	D) Support for the private sector E) Development of income-generating activities F) Protection of the environment	Project to be defined and funding to be found
		Capacity building								
	Preparation and implementation of sanitation programmes for other urban centres in Chad	Progressive equipping of urban centres with sanitation infrastructure	Capacity building	To be found	1 200 000 000	Urban centres	Sanitation plan for each urban centre	2003-2010		Project to be defined and funding to be found
		Capacity building								
Sanitation of urban centres located in the oil extraction zone	Progressive equipping of urban centres with sanitation infrastructure	Capacity building	Ongoing	For Ref.	Western Sudanian Zone		2003-2006		Ongoing	
	Capacity building									
<b>Total funding obtained and to be found for urban sanitation for the period 2000-2010</b>				<b>19 080 000 000</b>						

Proposed action plan for sanitation 2011-2020

Field	Action	Links with strategies	Funding	Cost (FCFA)	Intervention area	Anticipated results/ achievements	Period	Impacts	Status
Rural sanitation	Development of basic sanitation infrastructure in a rural environment (latrines, wastewater collection)	Promotion of basic village sanitation measures	To be found	7 000 000 000	National	Development of basic infrastructure in the villages	2011-2020	Improvement of sanitation conditions for village populations Local people trained and capable of applying elementary sanitary measures	Project to be defined and funding to be found
	(These schemes could form one segment of the village water supply programmes)	Capacity building				Dissemination of health education programmes amongst the village populations			
	Preparation and dissemination of information and awareness-raising programmes on sanitation and the links between water, hygiene and health	Promotion of basic village sanitation measures	To be found	1 000 000 000	National	Village populations made aware of educated and trained in basic health practices	2000-2010	Improvement of sanitation conditions for village populations	Project to be defined and funding to be found
	Training programme for craftsmen on construction techniques for basic sanitation facilities	Progressive equipping of urban centres with sanitation infrastructure	To be found	500 000 000	National	Craftsmen capable of building and developing basic sanitary infrastructure	2011-2020	Improvement of sanitation conditions for rural populations Development of income-generating activities	Project to be defined and funding to be found
<b>Total funding to be found for village sanitation 2011-2020</b>									
Urban and semi-urban sanitation	Construction of secondary and tertiary stormwater collection networks in the four largest towns in Chad	Progressive equipping of urban centres with sanitation infrastructure	To be found	20 000 000 000	N'Djaména, Moundou, Sarh, Abeche	Construction of stormwater drainage networks	2011-2020		Project to be defined and funding to be found
	Construction of wastewater collection and treatment networks	Progressive equipping of urban centres with sanitation infrastructure	To be found	44 000 000 000	N'Djaména, Moundou, Sarh, Abeche	Construction of wastewater collection networks and treatment systems	2011-2020	A) Sanitised living environment B) Improvement in the state of health of urban populations	Project to be defined and funding to be found
	Preparation and implementation of sanitation programmes for other urban centres in Chad	Progressive equipping of urban centres with sanitation infrastructure	To be found	3 000 000 000	Urban centres	Sanitation plan for each urban centre	2011-2020	C) Development of local and national capacities in the sanitation field D) Support for the private sector E) Development of income-generating activities F) Protection of the environment	Project to be defined and funding to be found
	Training of human resources in sanitation at all levels	National capacity building	To be found	6 600 000 000	National	Human resources trained in all aspects of sanitation	2011-2020		Project to be defined and funding to be found
	(Administration, civil society, sanitation engineers and technicians, managers, etc.)	National capacity building							
	<b>Total funds acquired or under discussion concerning the support measures for 2000-2010</b>								
				<b>73 600 000 000</b>					

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