

THE INTEGRATED PLAN FOR CHAD'S WATER DEVELOPMENT AND MANAGEMENT (SDEA)

CONSISTS OF EIGHT ADAPTABLE DOCUMENTS

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This main document

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An atlas of maps (GIS)

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Six thematic volumes:

Water resources and the environment

Village water supply

Urban and semi-urban water supply

Sanitation

Pastoral water supply

Agricultural water supply

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Each thematic volume has adopted an integrated approach.

The institutional, human, physical, technological and financial constraints and perspectives have been studied in each one. The thematic volumes should be referred to for detailed information concerning these issues.

This main document includes and summarises the results from these thematic volumes according to the economic, social and environmental dimensions of the water sector, which is vital to sustainable development. This has led to the definition of a policy and a costed action plan.

Chad is striving to overcome the identified constraints, with well-proportioned, gradual external support, in order to achieve the national objectives of the SDEA and the Millennium Development Goals.

The SDEA, an adaptable document
on water policy in Chad,
was validated by the nation and
approved by the Council of Ministers (HCNE)
on 30 April 2003

SUMMARY - CONCLUSIONS

The first Integrated Plan for Chad's Water Development and Management

The Integrated Plan for Water Development and Management (SDEA) is a multisectoral and strategic master plan providing guidelines for the sustainable development and management of water resources in Chad, with a view to meeting the populations' basic needs and promoting the economic and social development of the country while protecting the environment. It complies with the objectives set by the Chadian Government to reduce poverty and, in terms of the deadline of 2015, is consistent with the Millennium Development Goals (MDGs) as specified and completed during the Johannesburg World Summit on Sustainable Development.

The SDEA constitutes an adaptable reference instrument to be used by all internal and external stakeholders who are, or will be, involved in the Chadian water sector.

It contains:

- a detailed analysis of the current situation in order to learn the lessons of past projects and approaches;
- Chad's new water policy;
- the general implementation strategies defined for the sustainable development of each water-related subsector, as well as the general strategies defined for the accompanying measures. These notably include:
 - ▶ the organisation and national capacity-building strategy of the sector;
 - ▶ the strategy for mobilising internal funds (involving the users and the Chadian government's policy; the country will begin exploiting oil in 2004);
 - ▶ the strategy for mobilising external funds (financial aid);
 - ▶ the indicator-based strategy for monitoring the SDEA programmes and their impacts;
 - ▶ a strategy for assessing and updating the SDEA based on a national unit equipped with modern resources for managing information on the SDEA and its shared data base, including its gradual extension to decentralised levels.
- a costed action plan for each set of physical or accompanying programmes in order to encourage short-term priority actions aimed at reaching the objectives set for 2010 and 2020. This action plan is based on the fundamental framework of all the projects and programmes which are either in progress or to be approved for the next five years.

The SDEA integrates the basic human needs, economic options for development, environmental constraints and water resources into a single overall approach to sustainable development. Therefore, the SDEA is not restricted to "drinking water and sanitation" issues; its integrated approach encompasses all the other economic uses (industrial, agricultural, pastoral, fisheries) and environmental uses of water (rain water, surface water and groundwater), a resource which is vital, unique, shared, limited in quantity and vulnerable to pollution.

The SDEA consists of eight adaptable documents based on an updatable GIS

The complete SDEA comprises a main document (the present document) and six thematic volumes (one for each subsector): village water supply, urban and semi-urban water supply, pastoral water supply, agricultural water supply, water resources and the environment, and sanitation. It also includes an eighth document: an atlas of the main adaptable maps (GIS) produced during the project.

The SDEA is the result of a national participatory approach

These documents are the result of a wide national consensus that involved all the stakeholders who are active in the Chadian water sector. They were discussed in detail by the Intersectoral Technical Committee for Water (CTIE), a technical and operational consultation mechanism presided by the Directorate of Hydraulic Affairs at the Ministry of the Environment and Water. The entire SDEA has also been validated in the regions and at national level, with support from another multi-stakeholder consultation mechanism, the National Water Management Committee (CNGE) consisting of general managers, a few elected

members of the National Assembly and a representative of the mayors. The consultation mechanism has been placed by decree under the Prime Minister's authority, in his capacity as president of the High National Council for the Environment, the political body that approves the SDEA.

The SDEA documents were drawn up in Chad according to a strategic, integrated approach

More than 30 national consultants were called upon to participate in the process of drawing up the SDEA. They were selected and trained in the basic concepts of participatory planning, and made aware of the impact of water in the fight against poverty through equitable, sustainable access to clean water, sanitation and income-generating activities dependent on water. They were supported when necessary by eight international consultants also recruited by UNDESA (United Nations Department of Economic and Social Affairs). The reports produced by these various consultation teams were discussed by the Intersectoral Technical Committee for Water (CTIE). Following this first series of reports, each volume was finalised by carrying out additional studies and work in order to produce comprehensive documents covering each water and sanitation subsector.

During the second stage, the UNDESA (executing agency) team from the support project (funded by the UNDP) produced an overview of each volume for subsequent analysis and discussion at the subsector workshops organised in April and May 2002 in N'Djaména. These workshops, operating under the aegis of the CTIE, brought together the institutional stakeholders and civil society representatives (users, private sector, associations, etc.) by subsector; the remarks and observations that they contributed were incorporated in the final version of each thematic volume.

A general overview of these subsector documents, accompanied by additional studies of macroeconomic aspects, the link between access to water and poverty reduction, the financial aspects (notably the users' contribution to the water service cost and the contribution from the State's budget during the oil boom era) coupled with a study of sector organisation and the indicator-based monitoring-assessment of the SDEA, were all used to draw up the initial version of the main SDEA document. This initial version was validated, under the aegis of the National Water Management Committee (CNGE), during regional workshops held in Abéché, Moundou and Mao in late June and the first two weeks of July 2002.

The remarks and recommendations made during the regional validation workshops were included in the second version of the main document, which was validated nationally in early November 2002.

The third version includes the recommendations from the national validation workshop and, lastly, the fourth and final version (the present one) includes the recommendations from the High National Council for the Environment that were set forth when **the Government gave its final political approval to the SDEA on 30 April 2003.**

The main SDEA document consists of five chapters

Chapter 1 gives an assessment-diagnosis of each water and sanitation subsector. The main conclusions of this assessment are as follows (see each thematic volume for detailed information):

- **Chad has considerable reserves of water.** However, this should not hide the major constraints involved in mobilising water resources, in particular the unequal distribution of rainfall and surface water both geographically and in time, and the lack of knowledge about how the main aquifers work. As a general conclusion, it is clear that water resources are no hindrance to the economic and social development of Chad. However, a **prerequisite** to developing these water resources will be to carry out detailed studies in order to provide more information on the relations between the main hydrological and hydrogeological systems in the country.
- **The drinking water supply rate** for the population of Chad as a whole was only 23% in 2001. It was a mere 17% in rural areas, 25% in towns in the non-concessionary area and 40% in towns in the STEE concessionary area. Major efforts need to be made in order for the entire population of Chad to have equitable and widespread access to drinking water and also to achieve the Millennium targets (an overall access rate of 60%).
- **The absence of essential basic data**, such as livestock numbers and fodder resources, is a major constraint in evaluating water requirements and appropriate facilities in the field of pastoral water supplies, and in developing the entire stock-rearing sector.

- **The average increase in cereal production** has been only 2% per annum over the past 20 years in spite of major investment in the agricultural water supply sector, while the annual population growth rate over the same period has been 2.5%. Current cereal production satisfies only a little over 55% of requirements. Significant efforts must be made to increase the productivity of the existing irrigation areas and to develop new schemes in order to maintain and in particular to increase the level of satisfaction of cereal requirements for the population as a whole.
- **There is practically no basic sanitation infrastructure**, in either rural or urban areas. Everything needs to be done in this field. In addition, there are numerous institutional stakeholders involved in sanitation, working with almost no financial resources and too often without being able to coordinate their activities and programmes. However, in recent years, initiatives have been taken by neighbourhood organisations to make up for the shortcomings of this subsector, but on a very local scale.
- **The legal and regulatory framework is very scant.** The Water Code is the only law governing water. However, the decrees bringing this law into force had still not been promulgated in 2001. This hampers harmonious development in this area, especially with regard to defining and sharing responsibilities among the various stakeholders and managing the facilities for exploiting water resources.
- **There are many stakeholders ranging from private to public.** To develop and strengthen the private sector, it seems essential to encourage partnerships between national and international companies. With regard to the public sector, it seems important to clarify the role and responsibilities of the various stakeholders in the water sector and to define the legal and regulatory framework in detail.
- **National capacity-building** in all sectors is a priority and a necessity in order to ensure the sustainable development of water resources and guarantee socio-economic development for present and future generations.

Chapter 2 is devoted to forecasting the basic needs of each subsector in terms of water, equipment and accompanying measures. These forecasts of needs are based on the Millennium Declaration, completed in Johannesburg (WSSD-2002), notably with regard to sanitation. This universal declaration now constitutes the common reference document used by all developing and developed countries. It sets out concrete goals to be achieved by 2015. The following extracts are related to water:

*"... We also resolve to halve, by the year 2015, the proportion of the world's people whose income is less than one dollar a day and the proportion of **people who suffer from hunger; and also, by the same date, to halve the proportion of people who are unable to reach, or to afford, safe drinking water.**"*

"... By the same date, to have reduced under-five child mortality by two thirds of current rates";

*"We reaffirm our support for the principles of **sustainable development** including those set out in Agenda 21, agreed upon at the United Nations Conference on Environment and Development, at Rio de Janeiro in June 1992... and, as first steps, we resolve to stop the unsustainable exploitation of water resources by **developing water management strategies at regional, national and local levels, which promote both equitable access and adequate supplies.**"*

Taking this declaration as a reference, the drinking water requirements of villages (with populations ranging from 300 to 2000) are estimated at 10 300 new water points (hand pump equivalents), which will supply 60% of these populations by 2015. In urban areas, in the non-concessionary sector, it is estimated that a further 488 basic supply units¹ (BSU) will be needed to satisfy 62% of the resident population. In the STEE concessionary area (11 towns), priority must be given to upgrading and extending the existing networks. However, to perpetuate this new infrastructure and guarantee that it will be sustainable, it is **essential** to create a favourable environment for the management and maintenance of the equipment (capacity-building, strengthening of the institutional framework).

¹Basic supply unit: drinking water supply system consisting of a borehole, pumping equipment (solar or thermal), a water tower and a small distribution network comprising 3 to 5 stand-pipes.

As far as pastoral water supply is concerned, before starting any major water point construction programmes, it is essential to improve the basic knowledge required, such as livestock numbers and fodder production capacity. These data can then be used to plan spatial distribution more efficiently, in an environmentally-friendly manner and to calculate the number of pastoral water points (currently estimated at about 4000) more accurately. Capacity-building is another priority for the pastoral water supply sector.

In agricultural water supply, the target to be reached is the development of an additional 100 000 hectares of land. Other measures to be carried out in parallel include the repair of existing equipment (large and small irrigation areas, etc.), as well as increasing productivity and capacity-building.

In sanitation, everything needs to be done. In urban and semi-urban areas, this will involve gradually implementing individual sanitation by building latrines geared to the different contexts, setting up waste collection systems and training the populations in basic sanitation practices. In rural areas, health education programmes will be disseminated among the village populations as well as in schools and health centres. Basic infrastructure, such as ventilated and improved pit latrines, filtering wells, etc., will be developed in villages.

In terms of water resources and the environment it will be necessary to obtain better knowledge of the mechanisms behind the aquifer systems, river systems, aquatic ecosystems and their interactions. Capacity-building will play a key role in this respect, as will the creation of data collection and processing procedures.

Chapter 3 discusses water policy and implementation strategies. Having defined the national objectives, compatible with the Millennium Development Goals and those of the WSSD action plan, Chad's water policy consists of twelve major founding principles, which will guide the measures to be carried out to achieve sustainable development of water resources and associated services. These principles are listed below.

"Water policy of Chad:

Principle 1 Water in the nation's public domain:

"All water resources within the boundaries of the national territory are in the public domain. In this capacity, they form an integral part of the State's public domain, which is inalienable and imprescriptible" (Article 1, Water Code).

Principle 2 Human health and access to water and sanitation:

The priority that has been defined for the Chadian population's health requires that they have extensive, reliable access to drinking water, hygienic living conditions, sanitation, and sufficient, nutritionally balanced food. Water mobilisation must contribute to this priority, while ensuring that no subsectors, notably sanitation and food production, are neglected.

Principle 3 Integrated management and use of water resources to promote sustainable socio-economic development:

Water is a vital resource for the population, for the country's socio-economic development and for biodiversity. Resources must be identified, protected and managed in an integrated manner, in terms of both quality and quantity. The State services must continuously improve knowledge, not just of water resources, considered as a whole, but also the manner in which these resources are used.

Principle 4 Gradual refocusing of the State's role:

The State's services must gradually withdraw from construction and maintenance operations and refocus on their role as a public utility responsible for monitoring and inspection, as well as for promoting best practices. This must take place gradually, as a national private sector emerges and becomes capable of running these operations on a long-term basis. Nevertheless, "regardless of the method used for managing the drinking water utility, the State (or the Decentralised Local Authority in the event of delegation) shall guarantee smooth operation" (Article 41, Water Code).

Principle 5 Water governance as close as possible to the user:

An integrated system for managing water as close as possible to the end user shall gradually be set up as decentralisation progresses, notably based on delegation of the public drinking water, pastoral water and sanitation service to the Decentralised Local Authorities and of the future devolved government structures.

- Principle 6 Institutional framework strengthening:**
The functions and obligations of public and private stakeholders as well as operators and associations concerning local water development measures must be clearly identified in a legislative and regulatory framework. Any development action involving the control of water, whether national or carried out by an external partner, must fall within the institutional and regulatory framework of the water sector.
- Principle 7 Participation of stakeholders and integration of water subsector policies:**
There must be an institutional consultative mechanism at all territorial levels enabling the main stakeholders, and notably the users, to participate in the design, planning and monitoring of development measures and the management of hydraulic equipment, water resources and their uses.
- Principle 8 A fair, transparent water price:**
*The water transfer and distribution equipment and the water operation service have a cost, which must be known to the users. The proportion of any subsidies must be transparent and known. The real-cost tariff of the public drinking water service must, as a minimum, cover all operating charges and renewal costs for equipment with a service life of less than twenty years. Equity must be the rule when fixing the price of the drinking water service within a homogeneous area. Thus, at a lower level of service, the unit cost of the water service **must not exceed** that of a higher level of service.*
- Principle 9 Collecting and sharing information:**
The public manager responsible for water shall be obliged to collect and publish information on water resources, all their uses and all discharges into the environment. Information on management data subject to control by the public service for drinking water, productive water (for agriculture, pasture-land, industry) and sanitation is collected in the context of a compulsory declaration system and laid down by law. In this context, the public service responsible for water must ensure that this information is collected, organised and processed to make it accessible, subject to certain conditions, to as many users as possible, with help from new technologies.
- Principle 10 Water management and environmental protection:**
The impacts of economic activity in the area of water, as well as the impacts of developing the mobilisation and use of water as a natural resource, must be examined and dealt with from the perspective of protecting the aquatic ecosystems of Chad and the environment in general. The polluter-pays principle must be applied.
- Principle 11 Strengthening subregional cooperation on shared water:**
Water must be a source of regional economic integration. Managing the use of shared water resources and protecting their quality must be agreed through subregional consultation and carried out in accordance with agreements signed with the existing basin authorities.
- Principle 12 National capacity-building is necessary to promote the sustainable management of water:**
Capacity-building at national, regional and local levels is necessary in order to promote the sustainable use of water resources. Each project implemented in one of the subsectors must include a significant proportion of capacity-building at national, regional and local levels. In addition, partnerships between the regional and international training institutes and the Chadian institutes will be encouraged."

Subsectoral strategies have subsequently been defined. These strategies concern capacity-building, strengthening of the institutional, legal and statutory framework and the type and quantity of physical infrastructure to be developed. These subsector strategies are described in detail in section 1.4 of chapter 3 and in each thematic volume.

Chapter 3 also presents a macroeconomic analysis of the water sector. It highlights the fact that the three main economic activities in Chad (excluding the oil sector), i.e., agriculture, stock-rearing and fisheries, representing over 40% of GDP, are closely dependent on water. Moreover, considering that water is first and foremost a shared, limited and vulnerable resource, essential to all forms of life, it is clear that water is a strategic lever in the economic development of Chad and the reduction of poverty. This analysis also emphasises the fact that, in spite of oil revenue, Chad needs its development partners in order to develop the water sector on a sustainable basis and to reach the Millennium Development Goals (MDGs) as stated and completed in Johannesburg (WSSD). However, given the scale of financial needs, it is important for the Government to increase its contribution to the sector over the next few years, since it currently represents only about 3% of the funds. For this purpose, oil funds should be reallocated rapidly to assist the Chadian water and sanitation sector.

Chapter 4 proposes an action plan that is related to the subsector strategies defined and also takes account of the objectives to be reached. In addition, the expected impacts of each project are described. These projects are spread over an initial period from 2000 to 2010, followed by a second period from 2011 to 2020.

Moreover, in addition to the construction of physical infrastructure, the proposed projects include capacity-building, strengthening the institutional framework and improving knowledge. The table below summarises, in billions of FCFA, the investments that need to be found in the field of water, according to a balanced scenario and a voluntarist scenario.

Summary of investments to be found in billions of FCFA² in the field of water (per year)

Subsector	2000-2010		2011-2020	
	Voluntarist scenario	Balanced scenario	Voluntarist scenario	Balanced scenario
Urban DWS – Concessionary area	5.90	5.90	3.00	3.00
Urban DWS – Non-concess. area	0.50	0.50	1.90	1.90
Urban sanitation	1.50	1.40	7.40	6.70
Agricultural water supply	5.00	5.00	5.00	5.00
Pastoral water supply	5.20	5.20	3.20	3.20
Village water supply	3.20	3.20	7.10	1.00
Sanitation in rural areas	0.70	0.70	0.90	0.90
Water resources	0.73	0.73	0.73	0.73
Total³	23.00	23.00	30.00	23.00

Source: SDEA 2002

In the *balanced scenario* case, these investments to be found represent:

- 1.5% of GDP in 2003 and 0.6% of GDP in 2011;
- about 16% of public investment throughout the period 2003-2015, i.e., investments compatible with the country's major economic equilibria as analysed above.

According to the *voluntarist scenario*, these investments represent:

- 1.5% of GDP in 2003 and 0.8% of GDP in 2011;
- about 22% of public investment throughout the period 2003-2015.

It is certain that these scenarios will have to be rebalanced after the first update of the SDEA, notably because of the weighty areas of irrigation and concessionary urban DWS, over which a large amount of uncertainty still reigns. However, the projects proposed to donors remain relevant in that they represent a guideline integrated plan that will provide a basis for study and more detailed programming.

² One billion FCFA = 1.52 million euros

³ The annual total of investments for each period has been rounded up to the nearest unit.

Investments are way behind schedule in the following areas:

- sanitation;
- DWS in the concessionary area;
- agricultural water supply to small village irrigation areas;
- accompanying measures.

The issue of accompanying measures is fundamental. These govern the efficiency and local ownership of management and maintenance structures, and hence the sustainability of the physical investments. Too many projects do not include sufficient capacity-building to manage installations. Little effort is devoted to providing support for surface and groundwater management or for integrated water management.

Lastly, **chapter 5** discusses the measurable performance of SDEA implementation, the economic and social justification of the plan, the indicator-based performance monitoring method and, lastly, methods for coordinating and updating the SDEA.

In accordance with the Millennium Declaration and the Johannesburg Summit report, implementation of the SDEA will contribute to the fight against poverty and environmental protection by promoting:

- a consensus and national coordination based on a voluntarist but realistic policy of extensive, efficient, fair and affordable access to drinking water and basic sanitation;
- education, training and awareness-raising for public and private groups of stakeholders and associations, whether national, regional or local, men, women or young people, for sustainable water management;
- basic activities and investments that will have impacts on the sustainable improvement of the populations' health;
- the implementation of strategies for the integrated management of water resources and uses in order to protect the aquatic ecosystems upon which biodiversity conservation, agricultural production, fisheries and stock-rearing depend.

Next stages

Beyond producing basic documents to support a water policy and its means of implementation, the SDEA is a dynamic process for constantly accompanying its subsequent development. Water is now considered on its own as a priority "sector" of national development in order to reduce poverty.

The Integrated Plan for Water Development and Management has already helped to redirect aid and draw up international aid programmes which are either in progress or scheduled. The consultation mechanism is functioning and will continue after the SDEA document has obtained political approval.

In 2003 and 2004, the Chadian government will begin setting up the central, regional and local (public, private and association-based) management procedures laid down in the SDEA. These efforts to rationalise investments will be undertaken in close collaboration with the donors and technical organisations in the field of water in Chad, and will need to be supported and renewed for many years to come.