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## ACRONYMS AND ABBREVIATIONS

ADB	African Development Bank
CCB	Communication for Change in Behaviour
DRC	Democratic Republic of Congo
EU	European Union
CNAEA	Comité National d'Action pour l'Eau et l'Assainissement
CNE	Commission Nationale de l'Energie
COPIREP	Comité de Pilotage de la Réforme des Entreprises Publiques
DNH	Direction Nationale de l'Hygiène
DP	Directions Provinciales
DRE	Direction des ressources en eau
DSCR	Document de Stratégie de Croissance et de Réduction e la Pauvreté
EIES	Etude d'impact environnemental et social
GWP	Global Water Partnership
IOTA	Installation, Ouvrages, Travaux et Activités
KFW	Kreditanstalt für Wiederaufbau
MDG	Millennium Development Goals
MDR	Ministère de Développement Rural
MECNEF	Ministère de l'Environnement, Conservation de la Nature, Eaux et Forêts
NGO	Non-Governmental Organization
OVD	Office des Voiries et Drainage
PARSAR	Projet d'Appui à la Réhabilitation du secteur Agricole et Rural dans les Provinces du Bandundu et du Bas-Congo
PEMU	Programme Eau potable en Milieu Urbain
PMURIS	Projet multisectoriel d'urgence de réhabilitation des infrastructures sociales
PMURR	Programme Multisectoriel de Reconstruction et de Réhabilitation
PNA	Programme National d'Assainissement
REGIDESO	Régie de Distribution d'Eau
SANRU	Sante Rurale
SAP	Subsidiary Actions Programme
SNEL	Société Nationale d'Electricité
SNHR	Service National de l'Hydraulique Rurale
SVP	Shared Vision Programme
VIP	Ventilated Improved Pit
UNDP	United Nations Development Programme
UNICEF	United Nations International Children's Emergency Fund
WCS	Wildlife Conservation Society

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Further, a regional workshop which brought together various stakeholders of water sector, experts, networks and consultants was held in Kigali from 15 to 17 December 2008 so as to receive the reports from the countries on the study and propose further actions to be taken in order to promote the IWRM implementation in the individual Nile Basin countries and at the transboundary level.

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**Raphael TSHIMANGA**  
**Lead consultant**

## SOMMAIRE

En réponse à l'appel du sommet mondial sur le développement durable en vue de mettre en place des plans efficaces de la Gestion Intégrée des Ressources en Eau (GIRE) de part le monde vers 2005, le Projet de Formation Appliquée (ATP) de l'Initiative du Bassin du Nil a entrepris une étude sur l'évaluation du niveau de mise en œuvre de la GIRE dans les pays du Bassin du Nil. Le présent rapport est une évidence de cette initiative, qui décrit l'état de mise en œuvre de la GIRE en République démocratique du Congo (RDC).

La GIRE est un procédé systématique d'allocation, d'utilisation et de la protection des ressources en eau en vue de réaliser les objectifs de développement socio-économiques, tout en préservant la capacité de charge environnementale. A cet effet, le développement des politiques, les réformes institutionnelles et législatives, et les incitations économiques sont des outils appropriés qui fournissent un environnement favorable à la mise en œuvre de la GIRE.

Le concept de la GIRE s'inscrit en opposition à la gestion sectorielle, fragmentaire et centralisée des ressources en eau et est à son niveau le plus fondamentalement concerné par le développement durable, l'intégrité environnementale, l'équité et l'efficacité économique. **Ainsi pour chaque pays, l'intégration de ces éléments à un niveau acceptable constitue la mise en œuvre de la GIRE.**

En général, la RDC reconnaît la pertinence d'une approche intégrée de gestion des ressources en eau. Bien qu'ayant développé un cadre de gestion des ressources en eau qui contient des éléments de la politique de gestion sous forme des stratégies ou plans directeurs, la plupart de ces éléments ne sont pas prêts à répondre à toutes les exigences de la mise en œuvre de la GIRE.

Ainsi, la mise en œuvre de la GIRE en RDC est encore à l'état rudimentaire. Ceci peut se justifier par une analyse comparative de deux situations : la situation actuelle et celle de transition.

La situation actuelle de la gestion de ressources en eau en RDC comprend un ensemble d'arsenal juridique et économique qui datent pour la plupart de l'époque coloniale, et par conséquent ne tient pas compte des défis courants de la gestion des ressources en eau.

La situation de transition vise à entreprendre des réformes institutionnelles et législatives profondes du secteur de l'eau et de mettre en place des outils adéquats pour la mise en œuvre de la GIRE. Ces outils sont : le Code National de l'Eau, La Stratégie Nationale de l'Eau, La Politique Nationale de l'Eau, les Normes et Directives de l'Eau qui se trouvent jusque à présent à l'étape de préparation.

Dans sa partie finale, ce rapport s'attèle sur un cas d'étude illustrant la performance d'une approche de la GIRE dans la fourniture d'eau et assainissement en milieux ruraux. La clé

à l'efficience dans la fourniture d'eau et assainissement en milieux ruraux a reposé sur les mécanismes de changement d'attitudes et de comportement dans l'utilisation de l'eau. Les instruments ayant concouru à ce succès comprennent entre autre la volonté politique, la coopération, une approche participative, la formation, la prise de conscience et les incitations. L'analyse de cette partie montre que la plupart d'acteurs en milieux ruraux sont déjà entrain de mettre en œuvre un certain nombre de mesures de la GIRE.

## EXECUTIVE SUMMARY

Recognizing the need for a sound water resources management and development, responding to the World Summit on Sustainable Development that called for Integrated Water Resources Management (IWRM) implementation and water efficiency plans for all countries by 2005, the Applied Training Project (ATP) under the framework of the Nile Basin Initiative (NBI) has conducted an assessment of the level of IWRM implementation in the Nile Basin countries. The present report constitutes an evidence of this assessment as it covers the status of IWRM implementation in the Democratic Republic of Congo (DRC).

IWRM is a systematic process for water resources allocation, uses, protection and conservation so as to meet social welfare and economic development while maintaining environmental carrying capacity. To this end, policies development, institutional and legislative reforms, and economic incentives are relevant tools which provide an enabling environment for its implementation within an integrated framework. The concept of Integrated Water Resources Management rises in contrast to traditional, fragmented, sectoral and centralized water resources management and it is at its most fundamental level concerned with Equity, Efficient and Environmental sustainability. **Thus for each country, integrating these elements on an acceptable level constitutes IWRM implementation.**

In general, the DRC is recognizing the relevance of an integrated approach to water resources management. The DRC has developed frameworks, which contain elements of policy, in the form of strategies or master plans. But most of these policies, plans or strategies are not ready to satisfy all the requirements for IWRM implementation.

The Status of the DRC towards IWRM implementation is still at its infancy. This statement is justified through a comparative analysis of two situations: the current situation of water resources management made up with an asset of instruments most of which emanating from colonial period and does encompass the current challenges of water resources management, and the transitional situation aiming at undertaking deep institutional and legislative reforms of water sector and developing tools for IWRM implementation at country level. These tools include the National Water Code, National Water Policy, National Water Strategy and the Norms and the National Directives for Water

This report is also backed up with a case study illustrating the performance of an IWRM approach in rural water supply and sanitation. The key to improved efficiency in water rural supply and sanitation lied in setting up mechanisms for changing peoples' attitudes and behaviour towards water use. It required a package of many tools selected to meet the local circumstances and focused on key target groups. Such tools range political will and cooperation, participatory approach, training to public awareness and incentives. Analysis of this section indicates that most actors, especially the water utilities in rural areas, are already implementing a number of measures towards IWRM.

# **1 INTRODUCTION**

## **1.1 Background**

The importance of water cannot be stressed enough. Water is not only vital for the human population in terms of its consumptive use, but it is also directly and indirectly related to the livelihood of many in domains such as agriculture, environment, tourism, economy and health. Water is also indispensable for the various ecosystem functions, which also benefit the human population. Ensuring sustainability of this resource has become matter of global concern, and that is why IWRM is a significant tool.

Integrated Water Resources Management (IWRM) is the integrating concept for various uses of water resources. This type of perspective ensures that various dimensions such as social, economic, environmental, and technical, are taken into account in the development and management of water resources (World Bank, 2007). The groundwork of IWRM is met in the fact that various uses of water are interdependent, and therefore the management of water resources must take this into consideration with an overall goal of sustainable development being present. This management system sees that all uses are met and balanced in the most sustainable manner possible, without compromising certain functions of water at the sake of others.

The concept of IWRM was introduced in its modern interpretation at the United Nations Conference on Environment and Development in Rio in 1992 (Chapter 18 of Agenda 21), and it has since that time evolved, somewhat differently in different countries depending on their geography, culture and stage of development.

The need for IWRM is expressed globally, regionally, as well as in reference to the Millennium Development Goals (MDG) and there are a multitude of organizations currently using IWRM in their mandates.

In the Nile Basin region, this need for IWRM has been expressed for an implementation of a balanced and sound water resources management and development, through various programmes such as SVP and SAP. Following this advocacy of IWRM, steps were undertaken for reforms and strengthening processes. However, the need for an evaluation of the level of IWRM implementation and assessment of various functions needed to strengthen this implementation is more than ever a must for the Nile Basin region.

## **1.2 Purpose and approaches**

Overall, the main intent and priorities of this study were to assess the level of IWRM implementation in the Democratic Republic of Congo (DRC), this through identification and evaluation of policies, legislations, strategies and actions for water resources management at country level. To this end, a descriptive approach using a comprehensive questionnaire, interviews, analysis of published reports and documentations was found useful. The assessment targeted professionals working in water sector. The document



review enabled accurate information and was found relevant for this study as supplement to many limitations from the respondents. The main documents reviewed included: Country master plans, Constitution, Technical country reports and the draft reports on water code, water policy and water strategy.

## 2 STATUS OF WATER RESOURCES MANAGEMENT IN THE COUNTRY

### 2.1 Country background information

The Republic Democratic of Congo is situated astride the equator in central zone of African continent. The country extends over a surface area of 2.345.409 Km<sup>2</sup> and shares its borders with nine countries as shown in figure 2.1. The country beneficiaries from favourable conditions alongside the equator and is an endowment of natural resources which make the country a potential driving force for socio economic development not only for its local population but also for the region.

The current population of the DRC is estimated at 60M of inhabitants, 70% of which live in rural areas.

Since 1990, the country is going through turmoil which has left an unprecedented socio economic and political situation as far as the history of the DRC is concerned.

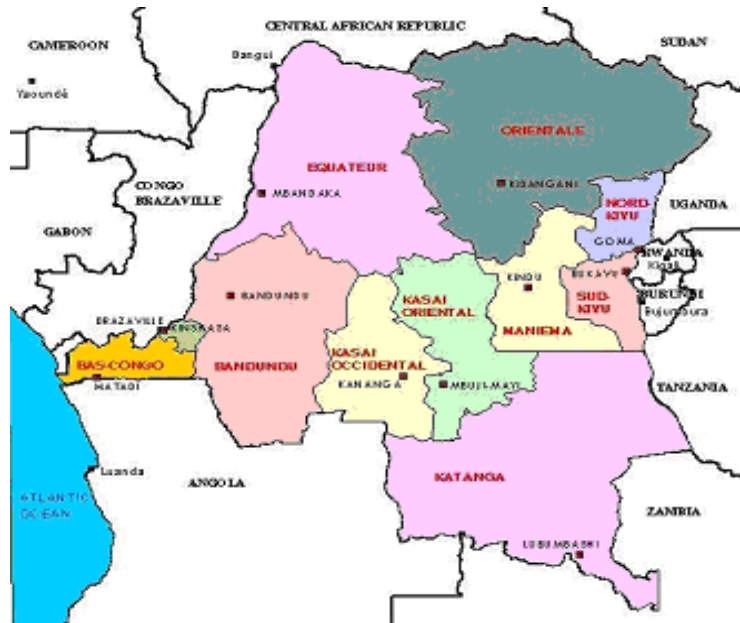


Figure2.1 Map of the DRC

## **2.2 Water resources availability**

The location of the DRC astride the equator and in the heart of central Africa, gives the country a special geographical stand. Geographically, DRC lies between North latitude of 520 degree and the South latitude of 1327 degree, between 12 and 31 East longitudes. It shares borders with nine countries: The Central African Republic, Sudan, Uganda, Rwanda, Burundi, Tanzania, Zambia, Angola and the Republic of Congo.

Its hydrographical network is an endowment of three main hydrological systems. The first is an isolated hydrological unity known as Shiloango River, making up the political boundaries of the DRC, the Republic of Congo and the Angola. The second hydrological system is a giant River of great international socio economic and political significance, draining 90% of the country territory. It brings together 11 riparian countries. The third river basin is the crest of the Albertine rift historically called the Congo Nile, which connects DRC to the Nile system, representing therefore opportunities for regional cooperation and socio economic benefits in the Nile basin.

Located at the very centre of Africa and straddling the equator, the DRC is among the wettest countries in the African continent and it records high rainfall whole year round, which is 1,200 mm/year on average. The country has a potential of exploitation which goes far beyond the expressed needs. The availability of water per capita is estimated at 25050 m<sup>3</sup>/pers/ year. The total renewable water resource is estimated at 1320 million m<sup>3</sup> of which 899 million m<sup>3</sup> represent surface water and 421 million m<sup>3</sup> represent ground water. The dependency of the country on external incoming flows is estimated at 30 %.

As for groundwater resources, they are distributed into six geological formations (Tshimanga et al., 2007). Of these, we have a zone of very important aquifers containing a type of geological formation essentially located in North West of DRC including Equateur and Bandundu and a zone of important aquifers in central basin with sand thickness of 120m. This type of important aquifers is also located in the North West of DRC in larger proportion than the previous. It extends to the central part of DRC sharing the boundaries with the heterogeneous and anisotropic materials. The hydrodynamic characteristics related to this type of geological formation range from 25-450 m<sup>3</sup>/h. Normal yield, the static level range from 2m to artesian, the dynamic level is from 5.7 to 41.6 m with a drawdown of 6.2 to 27.5 m. the GMP depth is about 18 m and the Normal yield using GMP ranges from 18 to 250 m<sup>3</sup>/h.

In the South East including Kinshasa, Kasai Occidental and Lubumbashi, there is a zone of aquifer of low potential with a sand thickness of 80 m. The hydrodynamic characteristics related to this type of geological formation range from 15 to 40 m<sup>3</sup>/h Normal yield, the static level range from 10 to 131.9m, the dynamic level is from 23.3 to 147 m with a drawdown of 0.43 to 15 m. the immersed depth of pumps varies from 30 to 171 m and the Normal yield using GMP ranges from 15 to 40 m<sup>3</sup>/h.

In central part of DRC essentially in Kasai Occidental and Kasai Oriental, there is a heterogeneous and anisotropic material with rapid infiltration and presence of salt water in their deepest part. This zone also extends to Bandundu and is also found in Kinshasa. The hydrodynamic characteristics related to this type of geological formation range from

42.5 to 55 m<sup>3</sup>/h Normal yields, the static level approximates 97.6m and the dynamic level 113.68 m with the drawdown of 16.8m. The immersed depth of GMP varies between 30 to 120 m and the Normal yield using GMP ranges from 30 to 50 m<sup>3</sup>/h. The aquifer transmissibility is  $2.26 \cdot 10^{-3} \text{ m}^2 / \text{s}$  and the coefficient of stock  $S = 10^{-5}$ . The quality analysis of sampled water from this geological formation shows a pH of 6 (in situ) and 6.4 (in laboratory). The CO<sub>2</sub> (equilibrium) is 0.17 mg/l, CO<sub>2</sub> (free) is 123.12 mg /l with a pH of equilibrium equal to 8.75 In the geological zone of Katanga, lies an aquifer of very heterogeneous and anisotropic materials with compact cretaceous rocks containing very important water resources. This type of geological formations is characterized by a normal yield of 80 to 180 m<sup>3</sup>/h, a static level of 14.7 to 21 m and a normal yield using GMP of 40 m<sup>3</sup>/h.

The last geological zone is an ensemble of fractures conditioning the development of aquifer zones. This type of materials characterizes the major geological formation found in DRC. It extends from North East in Orientale Province to South East in Katanga including Kivu. It is also located in Equateur, Kasai oriental and Bas Congo. The hydrodynamic characteristics related to this type of geological formation range from 30 m<sup>3</sup>/h in Bas Congo (Moanda) to 60 m<sup>3</sup>/h in the Orientale Province for normal yield, the static level is about 2m and the artesian level is about 45 m with a drawdown of 43 m and a normal yield using GMP ranging from 10 to 45 m<sup>3</sup>/h.

The withdrawal rate of ground water is estimated at only 2 % of the total ground water capacity.

### **2.3 Legal frame work**

The general legal framework of water resources management in the DRC is made up with laws and regulations as described below:<sup>1</sup> The regime of property right and land ownership is governed by law No 73-021 of 20 July 1973, modified and completed by law No 80-008 of 18 July 1980 which makes the state the sole owner of land and all resources above and below ground throughout the whole country. This law provides for a prerequisite agreement from a customary representative land owner before entering into legal agreement with the government. Numerous legislative texts regulating the use of natural resources in DRC are subordinated to the above mentioned regime.

A legislative text of 12 July 1932 on fishery describes prescriptions for granting permit of fishery exploitation, licensing and validity, indigenous right and duties of concessionaire. It is supplemented by a legislative text of 21 April 1937 regulating and prescribing

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<sup>1</sup> These laws are summarized from the following legal dispositions: The constitution of the DRC, the code of real estate of 1st August 1980 in article 18 and collection of legislative texts on Environmental issues of the DRC (Mbalanda et al., 2007)

measures on fishing activities and fishing materials, and a Ministerial act 047/ CAB/ MIN/ ECNT/94 of 18 February 1994 modifying and complementing the Act 042/ CAB/ MIN/ ECNT/92 of 6 April 1992 on the exploitation and exportation of aquarium fish.

A legislative text of 06 May 1952 on the concession and administration of inland waters and a legislative text No 74-009 of 10 July on territorial line of sea water and measures surrounding its use, protection and exploitation. Numerous ordinance laws deal with water resources protection and management. Ordinance Law of July 1914 on pollution and contamination of springs, Lakes, Aquifers and Rivers, which provides for the demarcation of protected areas for the collection of drinking water; Ordinance Law No 52/443 of 24 Dec 1952 on measures of protecting sources , aquifers, streams and rivers, wastage of water and control of right to use water and ownership. This legislation forbids implementation of activities to the proximity of water bodies at risk of compromising their yield without an authorization of provincial Governor. It prescribes measures on the award of concessions and administration of water and determining the rights of way of ground waters, lakes and waterways, as well as their use. Ordinance Law No 74/569 of 3rd Dec 1958 related to irrigation in order to protect the public sanitation. Ordinance Law No 69/041 of 22 August 1969 related to Nature Conservation. Ordinance Law No 71-079 of 26 March 1971 defining role of the government on rainfall water and wastewater networks. Ordinance No. 74/345 of 28 June 1974 on hygiene measures in built-up areas, as supplemented by Inter-Ministerial Decree No. 120/89 of 6 September 1989 on public health protection measures in cities and urban, commercial, industrial, agricultural, and mining centres, as well as rural built-up areas; Ordinance law No 77-022 of 22 February 1977 defining duties and responsibilities of the services and directorate at the Department of Environment, Nature Conservation, Waters and Forests. Ministerial act No 0072/CAB/ENER/94 of 16 November 1994 describing measures and regulations on Hydro electrical power plants. Ordinance Law No 77- 019 of 22 February 1977 on the charges of REGIDESO in its articles 1, 2 and 3. Ordinance law No 81 -013 of 02 April 1981 on general legislation of mining and hydrocarbons. Ordinance law No 82- 006 of 25 February 1982 on territory, political and administrative organization of the Republic, especially in its article 173. Ordinance law No 91-348 of 27 December 1991 fixing the rate and modalities of taxes and charges for the ministry of Energy. Ministerial act No E/SG/O/0133 C2/93 of 7 Mars 1993 fixing conditions for obtaining the ground water and surface water permit, conditions for carrying out drilling of aquifer and exploitation of ground water in DRC. Ministerial Decree No. 0014/DPT-MINER/86 of 2 September 1986 prohibiting the use of natural water other than that supplied by REGIDESO; and the Decree No. SC/073 of 22 April 2005 on sanitation and public hygiene measures in the city of Kinshasa.

## **2.4 Institutional frame work**

There are numbers of institutions involved in activities in DRC. Their nature of involvement ranges from policy-legal formulation and implementation, service provision and consumption. These include the ministries of Environment, Nature Conservation, Forests and Water, Rural Development, Energy, Planning, Health and Public Works. To these ministries are attached in turn various specialized Departments and Units

responsible for water-related issues. These include the Directorate of Water Resources and the National Program of Sanitation under the Ministry of Environment; the National Service of Rural Hydraulics (SNHR) under the Ministry of Rural Development; the National Company of Water Supply (REGIDESO) under the Ministry of Energy; the National Committee for Water Works under the Ministry of Energy; and the National Service of Drainage under the Ministry of Public Works. Beside these government ministries, department and specialized units there are private sectors, multilateral aids agencies and NGOs, active in the sector.

The Ministry of the Environment Nature Conservation, Water and Forestry (MECNE) is set on legal provision of the law No 75-231 of 22 July 1975 which lays down its duties. The ministry is in charge of policies development with regards to water resources management and sanitation.

The Ministry of Rural Development is in charge of new technologies for water uses in rural areas; formulating, implementing and monitoring rural and semi-urban projects of water supply and sanitation. The ministry intervenes in water sector through SNHR, a specialized unit for inventory of water resources in rural areas, construction of water supply and sanitation facilities, and training of populations in servicing and maintenance of the facilities. In conjunction of the SNHR efforts, several NGOs also operate in rural areas, but only a few (ICRC, OXFAM, ADIR, etc.) are efficient and play a key role alongside rural health zones.

The Ministry of Energy: Under the ordinance law No 03-0027 of September 2003, the ministry has a mandate of water supply service delivery and water resources assessment. Its actions are limited to urban and semi urban areas. The Ministry of Energy hosts the National Commission of Energy, which deals with Research of new technologies with regard to water uses and grants concessions for raw water withdrawal. The ministry also comprises of a Department of Water and Hydrology (DEH), and has supervisory authority over the National Company of Water Supply (REGIDESO), a State-owned corporation that provides urban water supply services. The DEH is responsible, in particular, for coordinating the Global Water Resources Assessment Programme at the national level.

The Ministry of Public Works and Infrastructures is responsible for the drainage of storm and sewage waters in non-housing sectors, as well as erosion prevention measures. The Roads and Drainage Authority (OVD), placed under the supervisory authority of this Ministry, intervenes in storm water drainage, wastewater disposal, and erosion control.

The Ministry of Health: On behalf of The Ministry of Health, the rural health zone (ZSR) is in charge of policy for primary health care at rural level by rehabilitating and maintaining boreholes, wells and springs.

The Ministry of Planning: The CNAEA under the Ministry of Energy deals with the Coordination and planning of water sector and sanitation. By Ordinance Law No. 81-023 of 14 February 1981, as amended and supplemented by Ordinance No. 87-105 of 3 April

1987, the Government set up the National Water and Sanitation Action Committee (CNAEA) which is an Inter-Ministerial Structure for the orientation and coordination of water supply and sanitation activities. CNAEA is under the supervision of, and is chaired by, the Minister of the Plan.

## **2.5 Service providers institutions**

The institutional set up of the DRC is fragmented into regulatory institutions and services providers' entities which are the state owned corporations dealing with water supply and sanitation both in rural and urban areas. These entities are the REGIDESO, SHNR and PNA.

Rising from a royal Order in 28 March 1933, the Water Distribution Agency (REGIDESO) is a state-owned technical, industrial and commercial corporation, endowed with legal status by Law No. 73-026 of 1973. According to its articles of association laid down by Ordinance No. 78-197, the corporation's role consists mainly in: the operation of water distribution systems and related facilities, water collection, supply and treatment; and study and construction of water distribution systems and related facilities. It deals with water supply in urban areas.

The Corporation is placed respectively under the administrative and technical supervision of the Ministries for Portfolio and Energy. It is managed by a Board of Directors and a Management Board chaired by a Managing Director. REGIDESO is bound to the State by a performance contract.

At the operational level, REGIDESO comprises, in addition to Kinshasa and its five sales departments, 10 provincial directorates which serve 94 centers, 44 of which have stopped operating for the past several years. That is due mainly to the country's post-conflict situation, which has resulted in obsolescence of facilities, the isolation of certain centers during the crisis, and the suspension of international co-operation which blocked the development of investments. Moreover, the frequent and invasive interferences of the supervisory authority in the decision-making process of the corporation create serious governance problems.

The SNHR was set up in 1983, and is under the supervisory authority of the Ministry of Rural Development. Its role is to make an inventory of water resources in rural areas; construct drinking water supply structures for the rural populations; and train the population in the servicing and maintenance of the drinking water structures constructed. SNHR has 17 stations countrywide, and in addition to its usual activities, it has since 1998, constructed irrigation structures. Its action is limited by its weak financial resources, and emphasis is laid on the construction of structures to the detriment of programming and maintenance. SNHR generally uses contractors for its operations. It is subject to the constraints and red-tape of public administration, whereas its field activities require utmost flexibility in management and decision-making.

The PNA which is placed under the supervisory authority of MECNE was set up by Executive Enactment No. 081 of 2 July 1988. Its role includes: 1) the planning and

coordination of environmental health activities; 2) vector control, in particular insect pests control in all its forms; 3) cleaning, collection and disposal of household refuse and garbage; 4) sensitization of the population on environmental hygiene; 5) drainage and cleaning of collector and ground sewers; 6) control of water portability; 7) treatment and disposal of excrement; 8) prevention and control of pollution; and 9) domestic and industrial hygiene.

PNA is active only in Kinshasa, where it collects solid waste, an activity for which it received Bank support under the PMURIS project. It has only limited presence in the provinces, mainly through the Municipal Sanitation Brigades (BCA). These brigades are understaffed and under-equipped. In general, PNA suffers from certain institutional weaknesses, in particular low qualified technical staff, lack of a means of coercion to control cleanliness, and lack of appropriate equipment for its missions.

## **2.6 Policies**

Generally speaking, the water policy in DRC is vested in the following visions: 1) Vision on water and food security: DRC acknowledges the importance of water for food production and economic development. The vision identifies agricultural development through good practices of irrigation as a key major for food security and poverty reduction; 2) Vision on Water and disaster management: DRC subscribes to the policy of flood and drought management, prevention of environmental degradation, maintenance of potable water; 3) Vision on water and rural water supply: Through the vision, DRC wants to bring to 60% over 17% actually existing the number of people accessing safe drinking water by 2020, ensure the durability of viable sources of water by maintaining water facilities, defining the framework of intervention with a clear definition of responsibilities at every operational level, establish a national program of water supply and sanitation for rural areas; 4) Vision on water and urban water supply and sanitation: In this connection, DRC subscribes to increasing access to sufficient water quality and quantity; 5) Vision on water and environment : Acknowledging the constraints related to environmental degradation, DRC intends to preserve the ecosystem durability through adoption of laws on water resources management, regulations on pollution and effluent discharge, reforestation, database management; 6) Vision on water and navigation: DRC acknowledges the development of navigation network as a mean for a socio economic and cultural exchange and development since it inquires less cost.

The policy of the DRC for water resources is also shaped by country master plans and programmes. These include the Water Supply and Sanitation Master Plan 1991-2010 under review, the Biodiversity Master Plan 1997-2002, the PMURR and the DSCRCP.

Under the DSCRCP, water and sanitation sector constitutes one of the priorities of the growth and poverty reduction strategy. In the short term, this sector will be given special attention by the Government so as to provide people with daily quantity of water that meets the standards and allows for a healthier living environment. The sector goal, as contained in the DSCRCP approved by the Government in July 2006, is to increase: (i) the drinking water service rate from 22% in 2005 to 26.9% in 2008 and 49% in 2015, and (ii)



the sanitation service rate from 9% in 2005 to 15% in 2008 and 45% by 2015. Consequently, the programme aims at rehabilitating existing infrastructures to facilitate access by the greatest number of users, increase the capacities of water production units, improve the management of water points by promoting community and private sector participation, strengthen the existing sanitation programmes and extend them nationwide.

To that end, in the medium term, under the urban and semi-urban water sub-sector programs for 2006- 2015, actions are planned to: (1) implement the REGIDESO Ten-Year Plan and the Kinshasa Water Supply Master Plan; (2) open up the water and sanitation sector to civil society initiatives, private operators, NGOs and associations, and the beneficiaries themselves; and (3) implement the Kinshasa city sanitation Action Plan. For the semi-urban and rural areas, there are plans to put in place autonomous community management systems under the decentralization and rural development policy, as well as local public works and engineering enterprises.

## **2.7 The planning, development and management of water resources**

The system of water resources at country level is structured into institutional attributions which have been streamlined to meet the goals of water resources planning, development and management as shown in the table 2.1 below.

Table 2.1 Framework of water resources planning, development and management.

<b>WRM components</b>	<b>ATTRIBUTIONS</b>			
	<b>URBAN WATER SUPPLY</b>	<b>RURAL WATER SUPPLY</b>	<b>URBAN SANITATION</b>	<b>RURAL SANITATION</b>
Policy	CNAEA, DI, Ministry of Energy	CNAEA, DI, Ministry of Agriculture and MRD	CNAEA, DI, Ministry of Environment, MPH	CNAEA, DI, Ministry of Environment
Legislation	Ministry of Environment, Ministry of Health, Ministry of Energy	Ministry of Environment, Ministry of Public Health, Ministry of Agriculture, Ministry of Infrastructure	Ministry of Environment, Ministry of Public Health,	Ministry of Environment, Ministry of Public Health
Regulatory instruments	Ministry of Energy	Ministry of Agriculture and Ministry of Rural Development	Ministry of Environment, Ministry of Public Health	Ministry of Environment
Planning	Ministry of planning, Ministry of Energy	Ministry of Planning and Ministry of Rural development	Ministry of Planning ,Ministry of Environment, Ministry of Public Health	Ministry of Planning ,Ministry of Environment, Ministry of Public Health
Financing	Ministry of Finance, Ministry of Budget, Ministry of Planning,	Ministry of Finance, Ministry of Budget, Ministry	Ministry of Finance, Ministry of	Ministry of Finance, Ministry of Budget,

	Ministry of foreigner affairs and international cooperation	of Planning, Ministry of foreigner affairs and international cooperation	Budget, Ministry of Planning, Ministry of foreigner affairs and international cooperation	Ministry of Planning, Ministry of foreigner affairs and international cooperation
Economic instruments	Ministry of Economy	Ministry of Economy	Ministry of Economy	Ministry of Economy
Hygiene	Ministry of Public Health, Ministry of Environment Ministry of Land affairs and Habitat	Ministry of Public Health, Ministry of Environment Ministry of Land affairs and Habitat	Ministry of Public Health, Ministry of Environment Ministry of Land affairs and Habitat	Ministry of Public Health, Ministry of Environment Ministry of Land affairs and Habitat
Customer protection	Ministry of Commerce, Ministry of Public Health, Ministry of Human Rights	Ministry of Commerce, Ministry of Public Health, Ministry of Human Rights	Ministry of Commerce, Ministry of Public Health, Ministry of Human Rights	Ministry of Commerce, Ministry of Public Health, Ministry of Human Rights
Normalization	Ministry of Industry, Ministry of Public Health	Ministry of Industry, Ministry of Public Health	Ministry of Industry, Ministry of Public Health, Ministry of Environment, Ministry of Land affairs	Ministry of Industry, Ministry of Public Health, Ministry of Environment, Ministry of Land affairs
Exploitation	EAD, REGIDESO, CNE, DEH, Private sector	EAD, SNHR, ZS, ONG, Private sector	EAD, OVD, DPNA, ZS, ONG, DEHPE, DCI, DNH, DLS	EAD, DPNA, ZS, ONG, Private

## **2.8 Water resources management issues and challenges**

Water resources in general in DRC are faced with several institutional, administrative and financial problems which range from non operational legislation, inappropriate legal instruments and in some cases complete absence of regulations. In many departments there are limited human capacities to execute the intended duties. There are also no proper financial policies resulting in shortage of funds. There are potential conflicts between traditional and the new IWRM concept. There is Poor coordination of institutions dealing with water resources internally (within the country) as well as externally (transboundary water resources); this is mainly due to lack of know how and difficulties to coordinated people from different sectors/countries with different interests and priorities. There is lack of participation in the formulation of policies, legislations and planning of water resources management and development that affects ownership and responsibilities of all stakeholders. Even where policies and laws are in place, they are not well disseminated and enforced hence less impacts recognized on the ground.

These aspects will be expended case by case in chapter 4 and recommendations for improvement will be proposed.

### 3 IWRM CONCEPT AND IMPLEMENTATION STATUS

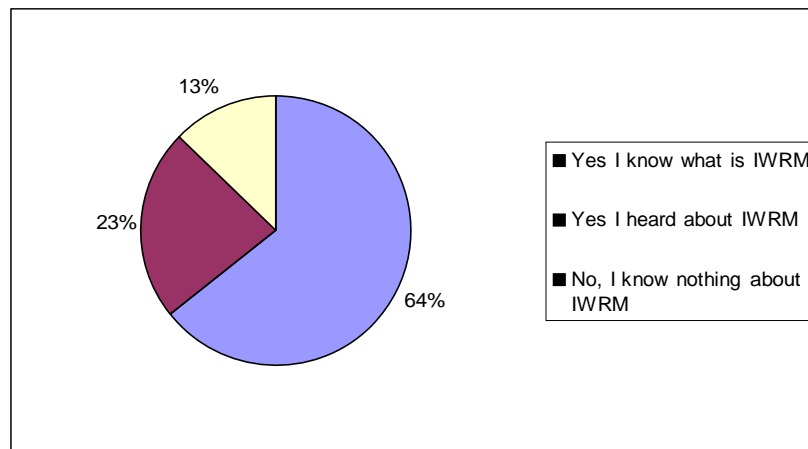
To properly assess the level of understanding of IWRM concept and the status of IWRM implementation in the DRC, a survey was carried out using a questionnaire and desk review of main documents such as water plans, reports and available documentation that reflects an approach towards development of an IWRM implementation.

#### 3.1 *How the concept is understood in the country*

Following the needs for sustainable development and conservation of the environmental carrying capacity, the world leaders and water professionals tabled in 1992, on four principles of IWRM. These principles traduce the finite and vulnerable character of water resources, the use of a participatory approach involving all layers of stakeholders, the key role of women towards water resources management and the economic value of water.

Understanding these principles can be assumed as key step towards IWRM implementation. Not only it traduces the level of knowledge of IWRM concept but also expresses the raising of awareness among professional regarding matters of water resources uses, protection and conservation.

The following results reflect an analysis of data provided by 31 respondents, selected among professionals, academicians and researchers. According to the results plotted in the figure 3.1, 64% of respondents know what is IWRM, 23% have heard about IWRM, and 13% have no idea on what is IWRM.



**Figure 3.1 General level of IWRM concept**

On the long run of this assessment, questions were also used to capture the level of understanding of the IWRM principles. It comes out of the analysis, as shown in the Figure3.2 and Table3.1 that majority of respondents have a medium understanding level of IWRM principles.

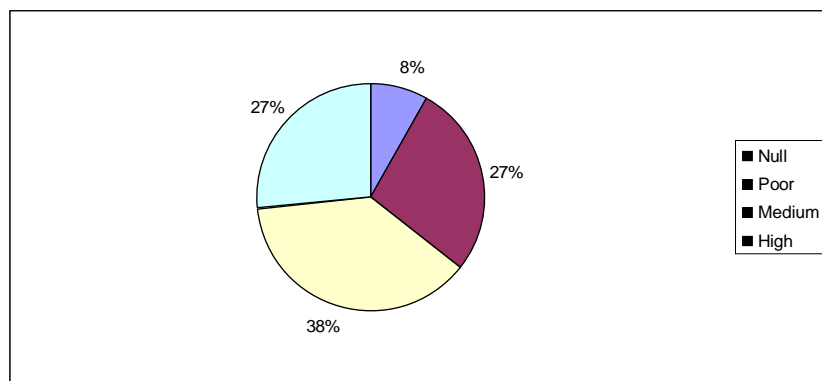


Figure 3.2. General understanding of IWRM principles

Table 3.1. Level of understanding IWRM principles

IWRM principles	% of respondents			
	Null	Poor	Medium	High
Fresh water is a finite and vulnerable resource and should be protected	6	19	49	26
Participatory approach	10	26	32	32
Role of women	10	32	35	23
Water has an economic value	6	32	36	26

### 3.2 Instruments of IWEM in DRC

A research of documents that contain policies or address water resources management in DRC was made. These documents, here considered as instruments of water resources management as they depict policies towards water resources issues in DRC, are made of country master plans, country constitution and country programmes. The following table presents the available documents that are perceived as policies, strategies, or master plans towards an IWRM.

Table 3.2 IWRM instruments

Instruments	WRM objectives	IWRM attributes (Functions)	Observation
Constitution of the DRC	Provide an enabling environment for water resource uses, protection and conservation	Water right, Equity, Sustainability, Economic efficiency	Implemented
Water Supply and Sanitation Master plan 1991-2010	-Provide a comprehensive analysis and diagnosis of water sector	Water investment plan, Water efficiency plan, institutional and	Not implemented, The programme run short of resources because of the 1990s political

	-Set up an action plan and strategies for WSS fro the horizon 1991-2010	legislative reform.	turmoil
Environmental Actions Master Plan 1997-2002	-Evaluation of various potentialities, -rational resources -exploitation, monitoring and control - Develop procedures for EIA, Develop an IMS	Pollution control, environmental sustainability, capacity building and institutional strengthening	Creation of a National Agency for Environment, -Creation of National Fund for Environment,- Creation of a WRD and a CNIE.
Biodiversity Mater Plan 1997-2002	Intitutional strengthening, - Capacity building, - Awareness rising, Legislative reform,- Cooperation.	Pollution control, environmental sustainability, institutional strengthening, capacity building and human resources development, Awareness raising, Legislative reform	Implementation of the international convention on Biodirversty1992
PMURR 2002-2007	Construct and rehabilitate the basic infrastructures for transportation, water supply, sanitation, Energy) - Build human and institutional capacities and redefine the major axes of policy development - Implement a financial system based on community based initiatives.	Investment plan, Water efficiency plan, Reforms, gender mainstreaming.	Implemented
DSCR	To increase access to safe drinking water	Poverty reduction plan, Investment plan, Water efficiency plan, Reforms, gender mainstreaming.	Implemented
Water Code	Provide an enabling environment for water resources uses, protection and conservation	IWRM implementation	Not implemented. Final draft in awaiting of parliamentary endorsement.
National Water Policy	Prevention of all kinds of threats to water,	IWRM implementation	Not implemented Final draft in awaiting of

	socio-economic development and poverty reduction.		parliamentary endorsement.
National Water Strategy	Provide actions as to meet IWRM objectives	IWRM implementation	Not implemented Final draft in awaiting of parliamentary endorsement.

### **3.3 Water demand and use**

The DR Congo has a potential of water resources which goes far beyond the expressed needs. Over total internal renewable water resources of 1320 million m<sup>3</sup> of the country, surface water represents 899 million m<sup>3</sup> and ground water represents 421 million m<sup>3</sup>. The dependence of the country compared to the entering flow from riparian countries is estimated at 30 percent.

The total number of population is estimated at 60 Millions of people with the population growth rate of 3.3 % per year characterized by a mean density of 23 p/Km<sup>2</sup>. Only 33 % of population reside in urban areas (REGIDESO, 2004). In 2000, water use was estimated at 356 million of m<sup>3</sup>, with 112 million for agriculture (32 %), 186 million for domestic use (52%) and 58 million for industrial use (16 %) (FAO, 2006).

In the 94 centres of water supply established throughout the country, ground water resources represent 8%, surface water from Regideso water distribution 71% and 21 % from the developed springs. Currently, 185 privately owned boreholes have been investigated throughout the country and they contribute 5 % of water supply. Effort provided by SNHR has led to a rehabilitation of 543 wells (92 in Bas Congo, 122 in Equateur, 273 in Kasai oriental, 42 in province oriental, 7 in Sud Kivu, 7 in Kinshasa) and 659 boreholes ( 149 bas Congo, 489 in Katanga, 20 in Kinshasa)

Agricultural activities in DRC are based on rain fed agriculture which beneficiate from favorable rainfall conditions astride the equator. Thus irrigated agriculture is limited in use to rice farming.

### **3.4 Matrix of IWRM attributes and level of implementation<sup>2</sup>**

The main task in this assessment was to critically examine the status of IWRM implementation at country level and to identify linkages between IWRM and poverty reduction. To this end, this section provides the general level of recognition of linkages between IWRM and poverty reduction, the general recognition of the importance of IWRM as an important tool for water resources planning, development and management, the level of mainstreaming of IWRM considerations in legal, institutional and policy framework.

<sup>2</sup> The attributes of IWRM are entirely picked up from the questionnaire provided for this assessment. They were initially compiled in form of questions with related levels of appreciation for which the respondent could tick the appropriate one (e.g : included, not included, to be included, low, medium, high etc.) This procedure was found inconsistent on the ground as many of respondents could not give the appropriate indication. Therefore, this form was adopted which consisted of indentifying all the attributes of IWRM provided in the questionnaire and grouping them in accordance with their relation to legal framework, institutional framework, policy or management instruments. Further, the exercise consisted of looking at their status, define their nature, indentifying their linkage with IWRM implementation (IWRM indicators) and indentifying the challenges related to their implementation.

## 1. Legal framework

IWRM Attributes	Status	Description- objectives	Level in relation to IWRM implementation(Indicators)	Observation and challenges related to implementation
Water law	Exist	Provide legal status for various water uses, exploitation and conservation	Constitution of DRC; Code of real estate of 1 <sup>st</sup> August 1980 article 18; Separate reports or documents on the legal dispositions such as collection of legislative texts on Environmental issues of the DRC in Mbalanda et al. 2007.	Absence of a water code.  The core legislative text dates from colonial period with few modifications.
Reforms	Exist	IWRM implementation	-Decree No. 136/2002 of 30 October 2002	-The reforms underway aim at implementing IWRM at country level. -Final drafts on water code, water policy and water strategy in awaiting of legislative endorsement.
Water right	Exist	Ownership of water resources which is held by the state. Provide the legal nature of water rights, the effective and beneficial use of water, and the need to acknowledge and respect existing uses and customary entitlements.	- The general law of property right No 73- 021 of 20 July 1973. -Constitution of the DRC, art 9	The general law of property right assigns use of the country natural resources to the public domain and makes the state the only owner of sol, forest, and water. This law is an improvement to the former Bakajika law on property right. However, it brings up a dual system of rights, namely at governmental level and at customary level
Enforcement	Exist	Describes the penalties imposed in case of contravention.	article 1 of the decree of 06 August 1922 inserted in penal Code, Book II, page 98;	The law on enforcement is part of the general penal law and does not provide specific measures to deal with various issues of water uses. Further, the law is obsolete and does not encompass the current challenges of water



				resources management.
Mechanism for conflict resolution	Exist	Not defined	Not defined	The conflict resolution mechanism draws from the general law of the DRC and there are not specifications on water issues.
Creation of management areas	Exist	-Identification and determination of protected and vulnerable zones. -The MECNEF is required to initiate all measures to fulfill its mission based on the best available scientific data.	-Ordinance law of 1914 on pollution and contaminants loads - Article 1 of the law No 75/231 of July 12, 1975 on the attribution of the MECNEF	Water resources are protected under the general framework of environmental law and policies.
Priority use of water	Not defined	Not defined	Not defined	
Equity	Exist	-Right to enjoyment of the natural resources, - Right to equal distribution of natural resources -Right to equal access to opportunity development	-Constitution of the DRC, article 58, 59. - The use of block tariff mechanism and subsidies to increase access of poors to potable water	
Pollution	Exist	- Conserve water quality, - Protect environment,- Control of waste discharge and other hazardous materials,-.	-Ordinance law of 1914 on pollution and contaminants loads  -Polluter pays principle enounced in the constitution of the DRC, article 54, 55 and 56.	Inadequate monitoring, Weak institutional performance. Legal framework obsolete.
Quality standards for various uses	Exist	-Improve monitoring and evaluation, -Improve operation	WHO standards	
Compliance	Exist	-Facilitate exploitation,	Ministerial act No	Historically the right to use water was

		<p>monitoring and control - The procedures require a request from the organization or an individual interested water exploitation to the general secretary of the Ministry of energy</p>	<p>E/SG/O/0133 C2/93 Of 7 March 1993 and specified in the law N°04/015 of 16 July 2004 fixing a nomenclature of taxes for administrative, judiciary and customs incomes</p> <p>-Decree N°03/027 of September 2003 fixing attributions of Ministries</p>	<p>released by a Decree of provincial governor, for pumping production with a maximum of 500CV, for agricultural and industrial uses with a maximum withdraw of 3m<sup>3</sup>/s and for domestic use. A Decree of the General governor( presently Minister of Interior ) in the demand deals with a theoretical power of 500 to 2000 CV and a withdrawal quantity of 3 to 10m<sup>3</sup>/s. A Decree of the king (Actually the president of the republic) for a pumping production of 5000 CV and more, and a withdraw of 25m<sup>3</sup>/s and more. When provided by a decree from a provincial governor, the exploitation can last up to 30 years; 50 years and 70 years respectively when provided by the ministry of interior and the president.</p>
Customer protections mechanism	Exist	<ul style="list-style-type: none"> <li>- Principle of right to safe and potable water,</li> <li>-Protection against threats from pollution and hazardous substances.</li> <li>- Reduction of costs to increase access of poors to water</li> </ul>	<p>Constitution of DRC, article 48, 202.</p> <p>The use of a bock tariff mechanism and subsidies to increase access of poors to potable water</p>	
Transboundary waters	Unclear	-	<ul style="list-style-type: none"> <li>- The cooperative frameworks and shared vision programmes developed for Congo River Basin(CICOS), Nile Basin (NBI) and Tanganika Basin(TBA)</li> </ul>	<p>Reference is made to the general law of property right No 73- 021 of 20 July 1973 and the decree Of 06 May 1952 on the administration of inland waters.</p> <p>Lack of specific rules on tranboundary waters</p>
Discharge permit	Unclear	The rate and modality of	Ordinance Law No 75-231 of	Unclear mechanisms; lack of monitoring ,

		taxes and charges for the ministry of Energy	22 July 1975 laying down the duties for the Ministry of Environment. Ordinance Law No 91-348 of 27 Dec,	control and evaluation
Mechanisms to enforce water legislation	Unclear	-	-	- These mechanisms are taken into consideration under the current reforms.

## 2. Institutional arrangement

IWRM Attributes	Status	Description- objectives	Level in relation to IWRM implementation(Indicators)	Observation and challenges related to implementation
Coordination of water sector	Exist	-Coordinate water supply and sanitation activities. - Define and orient the major directives for water actions at country level -facilitate collaboration and cooperation in water sector -Mobilize resources and capacities for water resources management	The Ordinance Law No 81-023 of 14 Feb. 1981 fixes mechanisms of coordination in water sector by an inter ministerial structure: CNAEA	-Low Empowerment to carry out duties, - The board highly Depends on external financial support to perform its duties. - Political implication on the delegation of the board's mandatory which does not ensure stakeholder ownership principle.
Empowerment to carry out duties	Exist	Institutional attributions	Decree No 03-027 of September 2003 describing roles and attributions of institutions involved in water sector	Overlapping of roles and embezzlement rising in conflicts
Staffing adequacy	Exist	- Ensure institutional efficiency	- provided from the general administrative law.	Lack of clear policies and strategies
Administrative adequacy	Exist	- Ensure institutional efficiency	- provided from the general administrative law.	Lack of clear policies and strategies
Knowledge sharing	Exist	-Ensure institutional efficiency	-Constitution of the DRC, art 203,	Lack of clear policies and

and human resources development			- Country Master Plans	strategies
Individual Performance	Exist	Ensure institutional efficiency and equity principle	-Constitution of the DRC, art 203, - Country Master Plans	Lack of clear policies and strategies
River Basin Organizations	Exist	Management of transboundary water	Existence of CICOS and NBI	-Does not exist as decentralized organizations at country level - Do not have a clear legal standing - Lack of policies to undertake water resources management at sub hydrological unit level. - Existence of centralized institutional structure.
National Apex bodies	Exist	describing measures and regulation on creation, registration and operation of non profit organizations	Law No 004-2001 of July, 20 <sup>th</sup> , 2001	Provided by the legislative dispositions but does exist as water entities or not active in water
NGOs	Exist	describing measures and regulation on creation, registration and operation of non profit organizations	Law No 004-2001 of July, 20 <sup>th</sup> , 2001	Provided by the legislative dispositions but does exist as water entities or not active in water - exist as international NGOs involved in rural water supply and sanitation
Community based Organizations	Exist	describing measures and regulation on creation, registration and operation of non profit organizations	Law No 004-2001 of July, 20 <sup>th</sup> , 2001	Provided by the legislative dispositions but does exist as water entities or not active in water
Farmer groups	Exist	describing measures and regulation on creation, registration and operation of non profit organizations	Law No 004-2001 of July, 20 <sup>th</sup> , 2001	Provided by the legislative dispositions but does exist as water entities or not active in

Water user associations	Exist	describing measures and regulation on creation, registration and operation of non profit organizations	Law No 004-2001 of July, 20 <sup>th</sup> ,2001	water Provided by the legislative dispositions but does exist as water entities or not active in water sector
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### 3 Management tools

IWRM Attributes	Status	Description- objectives	Level in relation to IWRM implementation(Indicators)	Observations and Challenges to implementation.
<b>Programmes and Plans</b>				
Poverty reduction plans	Exist	1)The drinking water access rate, which was 22% in 2005, rises by 27% and reaches 49% in 2015, that is, 15.93 million more people ; 2) Adequate sanitation services access rate, which was 9% in 2005, rises by 36% and reaches 45% in 2015, that is, 21.24 million more people ; 3)Mortality rate of children aged below 5 years estimated at 215‰ in 2004 will be reduced to 73‰ in 2015, that is, -142‰; 4) The poverty incidence, which was 71% in 2005, reduces to 45% at least.	The DSCR Master Plan.	-The percentage of drinking water coverage reflects the average between rural and urban areas. However a separate reading shows many discrepancies between them. -Political instability situation has hindered the sound implementation of the programme in the areas where war is being observed. - There is no adaptation of the programmes to the real situation on the ground
Water efficiency plans	Exist	-The drinking water access rate, which was 22% in 2005, rises by 27% and reaches 49% in 2015, that is, 15.93 million more people ; -Adequate sanitation services access	-The DSCR Master Plan. - The PMUR Master Plan	-Mostly depend on external funding. -The SNHR is less operational due to lack of financial support, and there is no adaptation of

		<p>rate, which was 9% in 2005, rises by 36% and reaches 45% in 2015, that is, 21.24 million more people.</p> <ul style="list-style-type: none"> <li>-Construct and rehabilitate the basic infrastructures for transportation, water supply, sanitation, Energy,SNHR)</li> <li>- Build human and institutional capacities and redefine the major axes of policy development</li> <li>- Implement a financial system based on community based initiatives.</li> </ul>		<p>the programmes to the real situation on the ground. There is lack of guide lines in accordance with a framework of investments and infrastructures of water supply and sanitation.</p>
National development and investment plans	Exist	<p>Construct and rehabilitate the basic infrastructures for transportation, water supply, sanitation, Energy)</p> <ul style="list-style-type: none"> <li>- Build human and institutional capacities and redefine the major axes of policy development</li> <li>- Implement a financial system based on community based initiatives</li> </ul>	<ul style="list-style-type: none"> <li>-The DSCRP Master Plan</li> <li>- The PMURR Master Plan</li> </ul>	<p>Mostly depend on external funding</p> <p>The SNHR is less operational due to lack of financial support, and there is no adaption of the programmes to the real situation on the ground. There is lack of guide lines in accordance with a framework of investments and infrastructures of water supply and sanitation.</p>
Reforms	Exist	IWRM implementation	-Decree No. 136/2002 of 30 October 2002	Drafts on water code, water policy and water strategy in awaiting of legislative endorsement.
Water resources protection	Exist	-Measures to protect sources, aquifers, streams and rivers, wastage of water and control of right to use water and ownership.	Ordinance Law No 52/443 of 24 Dec 1952	-The caducity of the law is a major hindrance to the sound implementation of water resources protection measures.
Rural water supply	Exist	Vision on water and rural water supply as to bring to 60% over 17% actually	-The Water Supply and	The Water Supply and Sanitation master Plan 1991-

		existing the number of people accessing safe drinking water by 2020, ensure the durability of viable sources of water by maintaining water facilities, defining the framework of intervention with a clear definition of responsibilities at every operational level, establish a national program of water supply and sanitation for rural areas.	Sanitation master Plan 1991-2010. -The DSCR Plan. - The PMURR Master Plan	2010 is currently undergoing review in light of the MDGs
Urban water supply	Exist	Vision on water and urban water supply and sanitation as to increase access to sufficient water quality and quantity	-The Water Supply and Sanitation master Plan 1991-2010. -The DSCR Master Plan - The PMURR Master Plan	The Water Supply and Sanitation master Plan 1991-2010 is currently undergoing review in light of the MDGs
Capacity Building and Human Resources Development in water sector	Exist	Ensure performance, institutional adequacy and quality service delivery.	-The Water Supply and Sanitation master Plan 1991-2010. - Environmental Actions Master Plan 1997-2002 -Biodiversity Master Plan, 1998-2003 -The GPRSP Master Plan. - The PMURR Master Plan	-The Water Supply and Sanitation master Plan 1991-2010 is currently undergoing review in light of the MDGs - Unclear country policy on CB and human resources development.
Institutional strengthening	Exist	Ensure performance and institutional adequacy.	-The Water Supply and Sanitation master Plan 1991-2010. - Environmental Actions Master Plan 1997-2002 -Biodiversity Master Plan, 1998-2003 -The GPRSP Master Plan. - The PMURR Master Plan	- Lack of synergy between various institutions involved in water sector.
Environmental	Exist	-Identification and determination of	Biodiversity Master Plan	-Lack of proper mechanisms

Sustainability		protected and vulnerable zones. -Preservation of the environmental carrying capacity. - Pollution control, environmental sustainability, institutional strengthening, capacity building and human resources development, Awareness raising, Legislative reform		for monitoring and evaluation.
Efficient use of water	Exist	<ul style="list-style-type: none"> <li>- Reduce losses</li> <li>- Enhance maintenance and monitoring</li> <li>- Increase access to water resources</li> </ul>	The Water Supply and Sanitation master Plan 1991-2010. - The PMURR Master Plan	<ul style="list-style-type: none"> <li>-Technical losses (unrecorded water) estimated at about 60%, as against an average of 38% for sub-Saharan Africa.</li> <li>- Culture of water as free commodity.</li> </ul>
Climate changes	Exist	-Existence of a unit on climate change located at the DDD	The Country master plan on Climate Change.	.
Health and sanitation	Exist	<ul style="list-style-type: none"> <li>- Principle of right to clean environment</li> <li>- Duties and attributions of the Ministries of Environment and Public Health</li> </ul>	-Ordinance law Of 1 <sup>st</sup> July 1914, -Decree 52-443 of 21 December 1952, - Decree No 03-027 of September 2003 describing roles and attributions of institutions involved in water sector	Existence of various operational programmes on health and sanitation involving SANRU, PNA, MECNEF, HOTEL DE VILLE.
Water resources assessment	Exist	Data collection, monitoring and evaluation	METTELSAT, RVF, DEH are responsible for coordinating water resources assessment at national level.	<ul style="list-style-type: none"> <li>-Low level of operation</li> <li>-lack of equipments and hydrometric facilities</li> </ul>
Service delivery	Exist	-Duties and attributions of the Ministry of Energy	-Law n° 78-002 of 6 janv 1978, articles n° 77 – 019 et	-Existence of REGIDESO, SNHR, PNA, DRILCO,



		- Documents of charges and status of the National Agency of Water Supply - Regulation ,creation registration and operation of non profit organizations	78 – 197 - Law No 004-2001 of July, 20 <sup>th</sup> ,2001	OXFAM, GTZ.
The protection of people against extreme events (floods, droughts).	Exist	- Vision on Water and disaster management. DRC subscribes to the policy of flood and drought management, prevention of environmental degradation, maintenance of potable water.	Environmental Actions Master Plan 1997-2002 -Biodiversity Master Plan, 1998-2003	Lack of clear policy towards achievement
The availability of funds and funding strategies for water supply and sanitation	Exist	Implement a financial system based on community based initiatives.	The PMURR Master Plan	The government contribution to water supply and sanitation programmes is estimated at 40% which is however unreliable.
Public investment	Exist	-Implementation of programmes and strategies with regards to water resources management and development	Constitution of the DRC, article 203. -The Water Supply and Sanitation master Plan 1991-2010. - Environmental Actions Master Plan 1997-2002 -Biodiversity Master Plan, 1998-2003 -The DSCR Plan - The PMURR Master Plan	The government contribution to water supply and sanitation programmes is estimated at 40% which is however unreliable. The investment policy mainly relies on external funding.
Private investment	Exist	-Provides for a prerequisite agreement from a customary representative land owner before entering into legal agreement with the government. Access to land is very unbalanced due to this law. -Historically, following the decree of	Law No 73-021 of 20 July 1973, modified and completed by law No 80-008 of 18 July 1980	Conflicts of competency between public administration and customary power. Lack of translation of the key texts into local language.

		06 May 1952 (Bulletin officiel, p.1068) the landowner does not have right on surface and ground water resources laying on adjacent to his property.		
Research	Exist	- Duties and attributions of the Ministries in charge of Scientific research, High education and university	-Constitution of the DRC, article 203. - Decree No 03-027 of September 2003 describing roles and attributions of institutions involved in water sector	- Unavailability of funds allocated to research.
Decentralization	Exist	-Promote management of water resources at decentralized entities.	- Constitution of the DRC, art 123.	Confusion on political boundaries (Provinces and territories) advocated by the law and Hydrological boundaries as unit of WRM. This confusion is somewhat relied in the draft on national water policy.
Regulatory norms and guidelines for sustainable development of water resources.	Undefined	Facilitate compliance	Decree No. 136/2002 of 30 October 2002	Provided under the current reforms.
Basin studies for long-term development and management of water resources.	Absent	-	-	- Provided under the current reforms.
Rainwater harvesting programs.	Undefined	-	-	- Provided under the current reforms.

Supply augmentation programs to meet increasing demand of water.	Exist	<ul style="list-style-type: none"> <li>- Reduce losses</li> <li>- Enhance maintenance and monitoring</li> <li>- Increase access to water resources</li> </ul>	<p>The Water Supply and Sanitation master Plan 1991-2010.</p> <ul style="list-style-type: none"> <li>- The PMURR Master Plan</li> </ul>	<ul style="list-style-type: none"> <li>-Lack of monitoring and evaluation</li> <li>-Unreliability of found from the government.</li> </ul>
Programs and policies for recycling of water, wastewater treatment and reuse.	Exist	<ul style="list-style-type: none"> <li>- Ensure sanitation</li> </ul>	<ul style="list-style-type: none"> <li>- Existence of the National Programme(service) for sanitation</li> </ul>	<ul style="list-style-type: none"> <li>- Insufficient equipment to meet the growing demand</li> <li>- Low level of operation</li> <li>- the programme is not operational country wide</li> </ul>
Programs and policies for watershed management.	Exist	<ul style="list-style-type: none"> <li>- Develop procedures for EIA, Develop an IMS,- Awareness rising,- Pollution control,- Duties of the MECNEF to create management areas</li> </ul>	<ul style="list-style-type: none"> <li>- Environmental Action Master Plan, - Biodiversity Action Plan, Ordinance Law on the duties of the MECNEF</li> </ul>	<ul style="list-style-type: none"> <li>-Lack of monitoring and evaluation.</li> <li>-The programme is undertaken in the general framework of environmental management and does not encompass the specific issues of water resources management</li> </ul>
Program for improving efficiency of water infrastructure to curtail water losses.	Exist	<ul style="list-style-type: none"> <li>- Reduce losses</li> <li>- Enhance maintenance and monitoring</li> <li>- Increase access to water resources</li> </ul>	<ul style="list-style-type: none"> <li>-The Water Supply and Sanitation master Plan 1991-2010.</li> <li>- The PMURR Master Plan</li> </ul>	<ul style="list-style-type: none"> <li>-Less than 1/3 of subscribers are equipped with meters,- There are plans to provide meters to all subscribers capable of paying their bills.</li> </ul>
Programs and policies on protection and rehabilitation of catchment areas.	Exist	<ul style="list-style-type: none"> <li>- Develop procedures for EIA, Develop an IMS,- Awareness rising,- Pollution control,- Duties of the MECNEF to create management areas</li> </ul>	<ul style="list-style-type: none"> <li>- Environmental Action Master Plan, - Biodiversity Action Plan, Ordinance Law on the duties of the MECNEF</li> </ul>	<ul style="list-style-type: none"> <li>Lack of monitoring and evaluation.</li> <li>-The programme is undertaken in the general framework of environmental management and does not encompass the specific issues of water resources management</li> </ul>
Groundwater management program.	Exist	<ul style="list-style-type: none"> <li>-Supply assurance in rural areas</li> </ul>	<ul style="list-style-type: none"> <li>-National policy towards water supply and sanitation in</li> </ul>	<ul style="list-style-type: none"> <li>-Low efficiency</li> <li>-Unavailability of found</li> </ul>

			rural areas. - Existence of service provider's institutions: SNHR, SANRU and NGOs	-Lack of cost recovery mechanism -Lack of maintenance, monitoring and evaluation,
Programs/policies to reverse ecosystem degradation and restore their functions.	Exist	- Environmental sustainability	Biodiversity Master Plan, Environmental Actions Master Plan, Existence of a Directorate of Sustainable Development(DDD)	Absence of clear policies towards achievement
Programs and policies to avoid floods and to overcome flood related disasters.	Exist	- Vision on Water and disaster management. DRC subscribes to the policy of flood and drought management, prevention of environmental degradation, maintenance of potable water.	Environmental Actions Master Plan 1997-2002 -Biodiversity Master Plan, 1998-2003	Lack of clear policy towards achievement
Programs and policies to combat drought and desertification.	Exist	- Vision on Water and disaster management. DRC subscribes to the policy of flood and drought management, prevention of environmental degradation.	Environmental Actions Master Plan 1997-2002 -Biodiversity Master Plan, 1998-2003 - Implementation of the international convention on Climate changes and desertification - Existence of a Directorate of Sustainable Development(DDD)	Lack of clear policy towards achievement
Policies for efficient allocation of water resources among competing uses.	Undefined	-	-	Undocumented case of competing users
Integration of drainage facilities in irrigated	Exist	- Efficient water use	- PMURR Master Plan	-Unavailability of found -Absence of monitoring and

agricultural development schemes.				quality standards -Lack of local expertise
Mechanisms to promote conjunctive use of ground- and surface water.	Exist	-Supply assurance in rural areas	-National policy towards water supply and sanitation in rural areas. - Existence of service provider' s institutions: SNHR, SANRU and NGOs	-Low efficiency -Unavailability of found -Lack of cost recovery mechanism -Lack of maintenance, monitoring and evaluation,
Norms and guidelines to evaluate environmental impacts of water projects.	Exist	- Develop procedures for EIA, Develop an IMS.	Decree No. 136/2002 of 30 October 2002	Provided under the current reforms.
Cooperative programs for joint management of shared water resources.	Exist	-	Existence of CICOS, NBI and Tankanyika Basin Authority.	-
Water demands survey in different water using sectors.	Undefined			
Programs and policies for managing agricultural water use.	Undefined	-	-	
Programs and policies for managing municipal water use.	Undefined	-	-	
Programs and policies for managing industrial water use.	Undefined	-	-	
Programs and policies for managing other water uses.	Undefined	-	-	
Programs for providing advisory (extension) services on WM issues	Undefined	-	-	-

to end users.				
Programs for transferring improved and cost effective water saving technologies.	Undefined	-	-	-
<b>Monitoring, Information Management and Dissemination</b>				
Functional hydrological and hydro-meteorological monitoring networks.	Exist	Water resources assessment	Ensured by METTELSAT with its meteorological stations country wide, RVF with its gauging stations on the major tributaries operation	- Obsolescence of equipments, - lack of proper funding mechanisms.
Standardized procedures for data compilation, processing and analysis.	Exist	The information stored under hard copy form include: hydrogeological maps, Geographical and climatic maps, reports and publications	- Each institution is holding its own database in accordance with the works carried out and experts' reports published.  Most of data monitored are still kept in hard format.	-Information Processed Manually -Inefficiency of a computerized system  -An adequate digitalized and computerized system data base is lacking.
A reliable integrated water resources management information system.	Undefined	-	-	-
Programs for information exchange and knowledge sharing about good practices.	Undefined			
Monitoring and reporting system to determine impact of IWRM reforms.	Undefined			

<b>Capacity Building</b>				
Research and publication	Exist	- Duties and attributions of the Ministries in charge of Scientific research, High education and university	-Constitution of the DRC, article 203. - Decree No 03-027 of September 2003 describing roles and attributions of institutions involved in water sector	- Unavailability of funds allocated to research.
Seminar delivery in IWRM to public audience	Undefined	-	-	-
Assessment of capacity building needs/ gaps in the water sector	Exist	- Capacity building needs assessment and plans for water education	Decree No. 136/2002 of 30 October 2002	Provided under the current reforms.
Capacity building programs on different aspects of water resources management.	Exist	Enhance knowledge and information sharing CB and human resources development which are cross cutting activities taking place in each plan	-The Water Supply and Sanitation master Plan 1991-2010. - Environmental Actions Master Plan 1997-2002 -Biodiversity Master Plan, 1998-2003 -The GPRSP Master Plan. - The PMURR Master Plan	-Lack of a specialized IWRM institution for capacity building and training delivery. -Lack of a comprehensive core IWRM educational curriculum
<b>Stakeholders Participation</b>				
Processes for stakeholders' participation in water management decisions making.	Exist	Regulation , registration and operation of non profit organizations	Law No 004-2001 of July, 20 <sup>th</sup> 2001	Absence of incentives for stakeholders involved in water sector.
Decentralized water resources management structures.	Undefined	-	-	- Lack of detailed information on sub hydrological units for water resources management.

				-lack of policies towards decentralization
Programs for involving minority groups in all aspects of WRM.	Exist	Ensure equity principle	-Constitution of the DRC, article 14.	Lack of clear policies towards achievement.
Programs for gender mainstreaming in all aspects of WRM.	Exist	Promoting gender equality by 2010 in order to achieve gender parity, while ensuring the application of all the legal instruments in favour of women, notably the CEFDAW, and improving the legal environment of 50% of the women through training, information and the creation of a legal aid mechanism.	-Constitution of the DRC, Article 14. -National Programme for Congolese Women's Advancement.	Inefficiency of programmes due to low level of empowerment.
Public awareness campaigns to educate people about water-health-poverty links.	Exist	Promotes water use and conservation, - reduce wastage- Enhance sanitation	Environmental Actions Master Plan	Lack of monitoring and evaluation Lack of clear policies and strategies towards achievement of the goals
Mechanisms to discuss/resolve trans-boundary issues with the riparian countries.	Exist		The general law of the DRC.	The conflict resolution mechanism draws from the general law of the DRC and there are not specifications on water issues.
Partnerships for water resources management.	Exist	Urban and Rural Water Supply and Sanitation,- -Rehabilitation, Hygiene Programme	Decree N°03/027 of September 2003 fixing attributions of the Ministries, Existence of bilateral or multilateral cooperative framework( CTB, GTZ, JICCA, CFD, OXFAM, AfDB, WB, EU...)	



<b>Financing</b>				
Strategy for mobilizing financial resources in the water sector.	Exist	Government contribution and external cooperation, Use revenues from the sale of water and related services	The country master plans	-Rely on external contribution -The internal contribution is of 40 % from the government which is however unreliable.
Tariff and water pricing	Exist	Encourage conservation,- Change in consumption,- Reduction in wastage, Assist in viewing water as an economic good	Block tariff mechanism, flat rate, use of metering.	-Low cost recovery -High rate of unpaid bill and technical losses
Accountability and transparency	Exist	Enhance performance, monitoring and control	PMURR Master Plan	-Accounting is computerized in Kinshasa with a real time Integrated management system set up in 2005 with PMURR funding. -In the centers, the commercial and accounting data are still processed manually for the most part. - Insufficiency in accounting equipments
Gradual cost recovery mechanisms/progressive tariff structures in all water uses.	Exist	Change in consumption,- Assist in viewing water as an economic good	Block tariff mechanisms, taxations, fines, Flat rate	Negative net income for the corporation of service providers
Subsidies/micro credit programs for promoting water conservation technologies.	Unclear	Subsidy for rural water supply and sanitation.	Unclear mechanisms and policy for subsidies	Low efficiency of water supply schemes in rural areas
Auditing	Exist	The performance of the centers and timely detection of irregularities.	Decentralized and transparency	-A yearly audit from an independent firm. - Existence of a department of management control, organization and strategies and

				the department of Internal audit in charge of controlling and monitoring the performance contract on the basis of monthly reports sent by the Provincial Directorates (DP) and commercial data.
Metering	Exist	Reduce UFW and wastage,	Less than 1/3 of active connections are equipped with a metering system.	-Lack of funding to produce meters and support equipment - Resistance to metered consumption, vandalism
<b>International Convention</b>				
Conventions	Status	Date of ratification	Implementation process	
The Helsinki Rules on the Uses of the Waters of International Rivers, 1966	Info not provided			
Wetland convention, 1971	Ratified	Ratified on 15 September 1994	Implemented Registration of the Congolese wetlands to the list of international wetland	
Stockholm declaration, 1972	Ratified	Not provided		
Mar del Plata Declaration, 1977	Ratified	Not provided		
The World Charter for Nature, 1982	Ratified	Not provided		
Ship pollution, 1978	Ratified	Ratified by the DRC on 16 September 1975		
Law of the Sea, 1982	Ratified	Ratified by the DRC on 17 February 1989		
CFC control, 1987	Ratified	Not provided		

Rio de Janeiro Declaration, 1992 -Dublin principles -Agenda 21 -Climate change -Biodiversity	Ratified	Ratified by the DRC on 15 September 1994 and on 8 December 1994	Implementation ensured through 7 steps extended over 5 years, which consist of: Organization, Evaluation, Strategy set up, action plan set up, Implementation, Monitoring and evaluation, Reporting
Desertification, 1994	Ratified	Ratified by the DRC on 17 October 1995	National Desertification Master plan
Watercourse convention, 1997	Info not provided		
Kyoto protocol, 1997	Ratified	Not provided	
Millennium Declaration, 2000	Ratified	September 2001	Operationalization of the DSCR
The New Delhi Declaration of Principles of International Law Relating to Sustainable Development, 2002	Ratified	Not provided	

## **4 SITUATION ANALYSIS: CHALLENGES AND RECOMMENDATIONS FOR IMPROVEMENT**

### ***4.1 Current situation policies and organizational framework***

The policy towards water resources management in DRC is supported by a regime of laws, most of them emanating from colonial period. The analysis of the legislative framework shows that water legislation addresses, among other things, the ownership of water resources which is held by the state under the Bakajika law of 1973, modified and completed by law No 80-008 of 18 July 1980, the legal nature of water rights, the effective and beneficial use of water, and the need to acknowledge and respect existing uses and customary entitlements. It addresses both the quantity and quality aspects of both surface and groundwater resources and also deals with delivery of water services.

The legislative framework takes into consideration the aspects of water resources management such as Water conservation, Protection of water supplies, protection of water quality, technology and efficiency requirements, creation of management areas, basin management principles, monitoring, information requirements, administrative rights, creation and enforcement of public rights, emergency measures, registration and recording of uses and supplies.

Water resources belong in the public domain, reflecting the notion of water as a public good. Water use rights are granted to private individuals or corporations under the provisions of national constitutions protected by the Bakajika Law of 1973, modified and completed by law No 80-008 of 18 July 1980. In this case, water right is closely linked to land rights, and entitlements are held on the basis of productive capacity without the transfer of rights. In addition, the legislative framework sets out the duties and functions of water management institutions and water service providers.

However, the goals and objectives for the management of water resources at the national scale and policies for regions, catchments, shared or transboundary water resources are not comprehensive. Matters of jurisdiction and delegation and items like: the extent to which water management is decentralized or consolidated, the use of economic incentives, capacity building to meet institutional challenges, monitoring and control to reduce ecosystem degradation, measures requiring investments, and their costs and benefits are not highlighted. An approach to moving away from single sectoral water planning to multi-objective and integrated planning of water resources, recognizing the wider social, economic and development goals and entailing cross-sectoral co-ordination is lacking. The priority of water use or the rank of use for allocation of water at times of scarcity or in case of competing applications, e.g. water for basic human needs or ecosystem protection is not mentioned.

Water quality protection includes preventive or corrective measures. Preventive measures are limited to effluent and discharge regulations, technical standards and requirements for treating polluted effluents, control of point sources and non point sources, but do not consider economic instruments as well as quality standards set according to expected or existing water uses and services. Corrective measures are limited to an unclear polluter pays principle which allocate responsibility for damages and do not address the major issues of cease orders, compensation for damage and economic losses, and remediation requirements.

Beside this legislative framework, the policy of DRC towards water resources is shaped by international conventions and treaties signed and ratified by the DRC.

#### **POINT TO PONDER AND RECOMMENDATIONS FOR IMPROVEMENT**

Most of water resources management instruments which date back to the colonial period, have become null and void and need to be revised. Generally the legislation remains incoherent as regards the legal framework for exploitation and protection of water resources. It is thus urgent to prepare and promulgate new laws and regulations on water resources management, in particular water quality standards, as well as rules and principles of checking potability and pollution control.

It is necessary to adapt the legal framework to the provisions of the new constitution, which stipulates that water is managed exclusively by the Provinces, meaning a decentralized situation of water resources management (Article 204, 220).

It is necessary to adopt new laws and regulations for urban water production and distribution within the current context of increasing challenge of REGIDESO monopoly.

Policies are not harmonized and formulated to meet emerging issues of IWRM, there is need to mainstream the legal framework in recognizance of other legislative frameworks for lack of appropriate appreciation of affecting policies could lead to inefficient water management especially in term of sustainability.

The current institutional arrangement of water resources in DRC is dealt with by many ministries with little co-ordination between them. Thus, the scope of the functions and the responsibilities assigned to these institutions needs to be assessed.

There is need to check on the information and knowledge requirements of the stakeholders forming these institutions and the requisite skill and training for them to be effective.

## **4.2 IWRM plans**

In DRC, water resources management plans were prepared, which have helped shaping the country water policies.<sup>3</sup> To this end, a Water Supply and Sanitation Master Plan 1991-2010 was prepared as to meet the country needs for water supply and sanitation at horizon 2010. This document is currently being reviewed under the MDGs as to serve the country water plan for the horizon 2015. Other WRM plans include a set of strategic actions for water sector through a game of country master plans.

Considering the elements of IWRM planning process,<sup>4</sup> these plans can be classified as IWRM plans as they contain among others: 1) A description of the water management approach; 2) A description of the current water resources situation in the country (a water resource assessment); 3) A description of the scope of the plan: the goals, aims and objectives, the vision for water management and also the level at which the plan is addressed (national, provincial or local level); 4) A description of strategies to achieve the vision, goals, aims and objectives - a link to other national processes; 5) Existence of a government structure to co-ordinate the national management of water resources across water use sectors.

However, a close look into these plans brings out some elements which question the essence of IWRM plan. These are: 1) The functioning of a consortium of stakeholders involved in decision making, with representation of all sections of society, and a good gender balance; 2) Water resources management based on hydrological boundaries; 3) Organizational structures at basin and sub-basin levels to enable decision making at the lowest appropriate level.

### **POINT TO PONDER AND RECOMMENDATIONS FOR IMPROVEMENT**

There is need to initiate comprehensive IWRM plans for an effective implementation of the IWRM

<sup>3</sup> Reference is made to sectoral policies towards water resources management

<sup>4</sup> Capnet et al, 2005: IWRM plans, training materials and operational guides.

## **Gender and Socio-economic Development**

Article 14 of the new Constitution of the DRC, devoted to women's advancement, provides that: "The authorities shall ensure the elimination of all forms of discrimination against women and the protection and promotion of their rights". However, socio economic indicators show that this principle is far to be met. The illiteracy rate of women (48%) is higher than that of men (24.8%). Moreover, 61.2% of women live below the poverty line, due mainly to the low productivity of their work as a result of difficult access to factors of production, such as land and credit. This situation disadvantages women on the labour market, which is marked by wide disparities. For instance, the proportion of women without access to economic opportunities is estimated at 44% as against 22% for men. The rate of representation of women in positions of power and decision-making is estimated at 10% country-wide and only 5% in Kinshasa. Considering the situation in water sector,<sup>5</sup> women are under-represented with only 13.6% of the overall staff strength and less than 3% of senior executives.

To reduce gender inequalities and ensure women's advancement, the National Programme for Congolese Women's Advancement has defined strategic objectives consistent with the priorities identified in the DSCR. It is essentially a question of promoting gender equality by 2010 in order to achieve gender parity, while ensuring the application of all the legal instruments in favour of women.

The socio economic development in DRC is also marked by the civil society's actions. Dating from the National Conference of DRC in 1990, the civil society has become a political force working towards the country needs for socio economic development. As far as environment and nature conservation are concerned, the operating NGOs are required to register with the Ministry of Environment. Some 220 national NGOs working in environmental sector are recorded although it is likely that few of them are really active. All national and international NGOs are required to comply with regulations of law No 004/ 2001 of the July 20, 2001 prescribing measures on the creation, registration and operation of the non profit associations.

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<sup>5</sup> the case illustrates the situation as observed in the corporation for water service delivery, which is a state owned company

### **POINT TO PONDER AND RECOMMENDATIONS FOR IMPROVEMENT**

It is currently admitted that stakeholders' participation and gender mainstreaming concept is one of major issues in IWRM implementation. The long term objective being that of attaining sustainable integrated planning and management of water resources through the creation of a conducive environment for the effective participation of women, a strategic planning would rely on the following items:

- To develop policy and strategy for gender mainstreaming in IWRM, including the encouragement of government to take affirmative action to attract women into IWRM related careers.
- To develop an affirmative strategy for improving the participation of Non profit Organizations at all levels of water resources development and management.
- To develop capacity building initiatives aimed at strengthening the expertise and skills of women dealing with water issues.
- To develop gender-based advocacy programmes, including a focus on capacitating water professionals to work with gender issues.

### **Human Resources Development and capacity building**

The water sector in general is suffering from a lack of adequate and skilled personnel to undertake actions for planning and development of water resources. Some times problems of water resources are known but the mean to address them are insufficient. The lack of specialized staff in water sector is a serious hindrance to effective implementation. Various IWRM programmes exist in conjunction with regional and international partners but yet this is not part of the country policy. Academic and research institutions' participation is mainly in the area of training personnel and in various researches. The public universities are the premier training institutions for water and related professions at both under and post-graduate levels. In addition these institutions provide research in various fields such as hydrology, water quality assessment and monitoring, engineering, environmental sustainability. However, the educational framework does not provide a comprehensive curriculum targeting the needs for IWRM.

Lack of consideration of important factors to water resources uses, protection and sustainability within the planning process, resulting from limited knowledge of water resources, has hindered the implementation of sound water management practices. Some times the problems associated with water resources are known, but the means to address them are insufficient or inexistent. The educational framework needed to present water concepts and issues to a variety of audiences is lacking. Further, water managers,



planners, and decision-makers do not have the fundamental information on water resources for planning purposes.

Useful information on water resources availability and their dynamic is lacking. Decision-makers do not have supporting knowledge to evaluate alternatives in order to make sound water management decisions.

Since 1973, the national company of water supply had two training centers in Kinshasa and Lubumbashi, aiming at training delivery on the basis of an annual plan. However, the discontinuation of co-operation with international partners in 1992 dealt a blow to the development of training activities both at home and abroad and to collaboration ties between vocational training organizations and institutions.

#### **POINT TO PONDER AND RECOMMENDATIONS FOR IMPROVEMENT**

A sound knowledge based is needed for different kinds of assessment, preparation of plans, design and operation of projects. There is need to develop a responsive educational framework able to face challenges and to know what tools can be used to implement actions such as water monitoring, groundwater exploration, land use controls and protection of vulnerable areas etc...

Without documented information on water use, availability and dynamics, sustainable management would be inexistent. In order to properly track use and availability, a centralized database should be developed to enhance the capabilities for management of the resource

#### **Institutional adequacy**

Most national level institutions such as ministries depend on budgetary allocations from central government and funding from bilateral and multilateral institutions for their programmes. However, the budgetary allocation from the government is irregular and insufficient and that from multilateral institutions is raised from a long process of procedures.

In order to refine the organizational framework and to establish institutional efficiency, a census was undertaken in the Ministry of Environment and the results revealed that: – the overall workforce of the ministry is estimated at 1140 employees of which 30% deal with administrative and financial duties, 20% involve in statistical, planning and cooperative issues. The total number of ground employees dedicated to technical issues is estimated at 21% of which water resources engage only 5%.<sup>6</sup>

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<sup>6</sup> Results documented in the national reports.

Another census carried out in the National Company of Water Supply revealed that the corporation does not have a full grasp of staff management despite the apparent management autonomy granted it by the performance contract. The organizational problems have resulted in an abnormal rise in the number of senior staff (33% of staff). Furthermore, women are under-represented with only 13.6% of the overall staff strength and less than 3% of senior executives. Moreover, the high average age of staff is also a cause for concern, with about 44% of employees being due for retirement in the next 10 years, as there is no clear replacement policy. Several audit reports have underlined the overstaffing compared to output, with a ratio of 56 subscribers to one employee.

### **Technical performances, efficiencies and supply assurance**

The organizational framework of water sector in DRC has assigned the management of water resources to the national company of water supply (REGIDESO) supplemented by the SNHR and PNA, which respectively deal with water supply in urban areas, water supply in rural areas and sanitation. Thus, the analysis dealing with this section will consider the management instruments as applied by these state owned entities.

As outlined in the matrix of IWRM attributes, which is basically a summary of WDM approaches and tools in use in DRC, it can be seen that water service providers have began employing instruments that are aimed at ensuring that they are commercially viable and the services offered are sustainable and of an acceptable level. These instruments under broad categories include technology improvements, metering consumption to curb wastage and raising consumer awareness on water conservation issues. Under economic measures, development of water tariffs as a first step towards achieving economic tariffs in the long run was implemented. The service provider company has designed tariff structures that are aimed at covering operation and maintenance costs. These include increasing block tariffs and the flat rate system. In exception of the flat rate system, the charges are related to the amount of water consumed.

A recent study carried out by the African Development Fund has shown that the operating cost of the corporation is higher than the net incomes which in turn show a negative value for the considered period (2001-2007),<sup>7</sup> with an improvement in 2005. Furthermore, less than one-third of the active connections are equipped with a meter. Subscribers are generally billed at a fixed price, and this leaves room for abuses and illicit water sale. The study also shows that, for the corporation, this situation generates technical losses (unrecorded water) estimated at about 60%, as against an average of 38% for sub-Saharan Africa. As a result, private household customers, with 56% of sales in volume, generated only 27% of the turnover in 2005. Faced with this problem, REGIDESO plans to provide meters to all subscribers capable of paying their bills and to increase the number of public fountains in areas with weak purchasing power.

The cost recovery mechanism is ensured through billing and collection, which allow an efficient control. However there are certain deficiencies in the system. The water

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<sup>7</sup> The results are documented in OWAS(2007)

consumption of Government Services (municipal consumption) represents 43% of the turnover. However, the accumulated water bill arrears from the municipal consumption (estimated at 80% of unpaid bills) constitutes a major obstacle to the performance of the corporation. Furthermore, all government services served by stand pipes are not metered and the charge is based on monthly fixed price of 450,000USD. This situation stands for all urban and peri-urban areas. Overall, only 1/3 of customers are serviced with stand pipes equipped with meters. Conversely, in very few places that have meters in place, these meters are either obsolete or totally mal-functional. This is a cause of major losses for the corporation and strategies are planned to equip users with meters.

Accounting is computerized in Kinshasa with a real time integrated management system set up in 2005 with PMURR funding. In the centers, the commercial and accounting data are still processed manually for the most part, with all the risks of errors and embezzlement involved.

The financial statements of the corporation are audited yearly by an independent audit firm selected by the Board of Directors for a six-year period. On the whole, the computer equipment is largely insufficient and only a few offices at the Head Office are connected to the Internet. The Department of Management, Control, Organization and Strategies and the Department of Internal Audit are in charge of controlling and monitoring the performance contract, on the basis of monthly reports sent by the provincial directorates and commercial data. It should be noted that in the centers, there is virtually no routine inspection of activities.

Currently, referring to statistics produced in 2003, the supply rate of the national company of water supply is estimated at 213 millions of m<sup>3</sup> which represents 70% of the company nominal capacity (303 m<sup>3</sup>). Taking in to consideration the technical losses and UFW estimated at 40%, the effective production is of 121, 20 millions cubic meters. This brings a figure of 66% of population having access to safe drinking water in urban area against 16 % (last statistics reveal 17%) in rural area, making up 34% of total population with access to safe drinking water country wide. In rural areas, about 16% of existing populations have access to potable water, which leaves about 30 millions of peoples living in rural areas without access to safe source of drinking water. Matching with the MDGs, the DRC has embarked in the process of bringing about 24 Millions of peoples to potable source of water in rural areas. In urban water supply, about 13 Millions of peoples representing 66 % of people living in urban area have access to potable water.

The evolution of water supply and sanitation as from the achievement of international water decade is presented in tables below.

Table4.1. Trend in water services of DRC

	1970	1980	1990	2000	2003
Water supply centers	50	56	76	94	94
Production capacity (m <sup>3</sup> /an)	105.934.940	188.734.030	268.451.229	302.745.600	298.150.750
Connection length (m)	2.839.988	3.970.123	7.252.459	11.054.916	12.747.029
Customer record	120.553	169.745	329.015	428.32	438.83
Supply rate (%)	27	43	68	66	65

Table4.2. Water demand projection at horizon 2010.

Demand m <sup>3</sup> /day	1988	1990	1995	2000	2005	2010
Domestics	735100	824600	1129400	1542600	2108100	2632500
Industrial	102271	120530	161293	2158442	288840	386526
Total	842371	945130	1290693	1758442	2396940	3019026

Table4.3. Access to water services

Water supply				Sanitation			
Year	Total Population 10 <sup>3</sup>	Population with access to water services	% of population with access to water services	Year	Total Population 10 <sup>3</sup>	Population with access to water services	% of population with access to water services
Urban		-	-	Urban		-	-
1980	11.406	4.905	43	1980	11.406	912	8
1990	14.496	9.857	68	1990	14.496	1.305	9
2000	18.424	12.344	67	2000	18.424	1.474	8
2002	20.322	13.413	66	2002	20.322	1.626	6
Rural		-	-	Rural			
1980	20.847	1.402	5	1980	20.847	1.251	6
1990	26.495	6.358	24	1990	26.495	3.179	12
2000	33.675	6.735	20	2000	33.675	4.041	12
2002	35.418	5.667	16	2002	35.418	4.250	10

In general, the tables show increasing water supply and sanitation services to meet the needs of an increasing demography. The trends in these tables show that since 1980, the

service provider's entities have increased the centers of water supply from 50 to 94 throughout the country. In the same time, improvement is observed in terms of production capacity, connection length and percentage of population having access to safe drinking water (from 43% to 66% in urban area and from 5% to 17% in rural area).

However, if we take into consideration the geographical distribution of the water supply and sanitation system, a lot of discrepancies with regards to the above mentioned global statement statistics are underlined. For instance in the town of Mbuji Mayi with a total population of 2.5 Millions, less than 20% have access to potable water. In Bukavu, which currently undergoes turmoil and massive displacements of populations, the situation seems to be worse. In Lubumbashi, the efficiency yield of water supply is estimated at 56% (49805 m<sup>3</sup>/Day for 1.2 Millions of inhabitants) of the total production capacity.

In Kinshasa, these discrepancies are even worse. For instance, the territory of Lingwala with 54000 of inhabitants receives 78% of water supply while the territory of Ngaliema with 463000 inhabitants is only met at 25%. The western and eastern parts of Kinshasa are less served with potable water. Kinshasa with its population estimated at 6 millions receives only 300.000m<sup>3</sup>/day in lieu of 700.000 m<sup>3</sup> expressed demand. Therefore, the general statistics of 34 % of population country wide having access to safe water is meaning less when we consider the geographical distribution and efficiency of supply rate.

Under the DSCR and PMURR master plans, there are plans to increase investment in the sector of water supply and sanitation both in rural and urban areas. These plans provide a long term investment at the horizon 2015 as shown in the table below.

**Table 4.4 Investment plan for the horizon 2015.**

Sub sector	%	Target Population 10 <sup>3</sup>	Population to be supplied	Investment cost USD
UWS	97	35.583	22.170	177844000
RWS	80	34.029	28.413	927851900
Total	89	69.612	50583	1105695900
US	40	14.674	13048	526534000
RS	80	34.029	29817	35159000
Total		48.703	42865	561693000

In rural areas, drinking water supply is provided by the SNHR. With its 17 stations established nationwide, SNHR has since its creation in 1983 up to 2004, constructed 5,084 developed springs, 543 rehabilitated wells, 659 boreholes equipped with pumps, and 65 simplified water supply systems serving a total population of 2,451,200 inhabitants, representing about 8% of the rural population. The water points constructed with the assistance of the other actors cover 9% of requirements. Thus, only 17% of the rural population has access to drinking water. In rural areas, the WSS Master Plan 1991-

2010 was based on objectives aimed at providing drinking water coverage rate of up to 80% and 100% so as to ensure access to hygienic sanitary facilities by year 2000 and 2010 respectively. These objectives are currently being reviewed under the MDGs.

Urban sanitation has provided an organizational framework with some physical infrastructures. Majority of these infrastructures in capital cities and other towns have suffered from lack of maintenance and have been clogged.

The drainage of septic tanks is a market shared between the private sector and PNA in Kinshasa, the only town where PNA is operational. Operators discharge waste products in disregard of any rules, generally into rivers flowing within the country. Concerning household refuse collection, only Kinshasa, Lubumbashi and, to a lesser extent, Kisangani, have a minimum collective service. However, there are ongoing initiatives supported by NGOs to develop household refuse collection systems whereby the populations of the country can be self-reliant.

#### **POINT TO PONDER AND RECOMMENDATIONS FOR IMPROVEMENT**

The financial structure of the National Company of Water Supply is unbalanced with a negative net position and a chronic deficit of the working capital. There is need to restore an improved financial position for this state owned company as to significantly raise its service level. In this light, appropriate measures from the state are required as to:

- reorganize its management for greater administrative and business efficiency;
- promote good governance values;
- adopt of an appropriate tariffing system and financial arrangements to restore the corporation's profitability and improve its balance sheet.

Among the financial management objectives, special emphasis should be laid on collection and allocation of operating income to cover operating expenses as a matter of priority.

As regards sanitation, there are no regulations on solid and liquid waste disposal (domestic, industrial and biomedical), as well as on storm water drainage, notably those relating to the design of facilities. The existing instruments are outdated, and the structures in charge of their implementation have either disappeared or, where they exist, lack adequate capacities to really force the polluters to reduce their nuisances and mitigate them.

Access to quality services has dropped considerably since the 90s following plundering and political and military unrest, leading to stoppage of investments, degradation of facilities and weakening of the managerial capacities of the sub-sector entities. The key management-related constraints are those faced by these entities (REGIDESO, SNHR and PNA). Hence, there is need for rehabilitation of existing infrastructures and replacement of those which were destroyed.

### **4.3 TRANSITIONAL SITUATION**

The DR Congo is currently undergoing major political, social and economic reforms with the main goal of addressing its poverty and promoting economic growth. Major reforms in the water sector are underway, thus strategies for IWRM implementation are addressed at institutional, policy and human resources development levels.

With the support of development partners, the Government has embarked on strengthening the legal and institutional framework and implementing reforms in order to ensure a balanced development of water resources.

By a Decree No. 136/2002 of 30 October 2002, the President of the Republic set up a Steering Committee for the Reform of State-owned Enterprises and water sector. The main achievement of these reforms is a preparation of Water Code, National Water Policy and National Water Strategy, relevant IWRM tools which have been completed and now in awaiting of parliamentary endorsement for their implementation.

The Water Code provides a legislative framework of water uses, protection and conservation. This framework defines the basic principles and general conditions for ensuring rational and sustainable management of water resources.

The overall objective of this framework is to ensure good governance of water resources through:

- Administration of all decentralised services of water sector
- Registration of all users (IOTA) as to ensure compliance of their activities.
- Implantation of all legal mandates of the IOTA.
- Implantation and follow up of all international agreements dealing with transboundary water resources.

The National Water Policy is centred on two main axes which are: prevention of all kinds of threats to water and implementation of IWRM for socio-economic development and poverty reduction. These main axes of the national policy underline key objectives that deal with institutional capacities, human resources development, water resources protection and conservation, water resources assessment and valuation, data collection and information system management, gender and socio economic development. The National Water Policy depicts the main IWRM pillars based on Equity, Economic

efficiency and Environmental sustainability principles. The main functions of IWRM provided by the National Water policy are as follow:

- . Water right and equity principle under which emphasis is made on the role of women and children in water resources management.
- . Security of people and ecosystems against threats and natural calamities
- . Participatory approach for water resources uses and protection
- . Increase of access to safe and potable water for the horizon 2025
- . Benefit sharing
- . Capacity building and human resources development

Furthermore, the National Water Policy elaborates on the management instruments as to ensure economic regulation and investment. The economic regulation is elaborated on the following principles:

- . Access to water services should be paid, but the government should guarantee a minimum vital provision for every household as to ensure equity and social welfare for the poorest.
- . Water pricing should take into account the exact volume of water used and the change due to connection characteristics,
- . The tariff should take into account the investment cost, rehabilitation cost, exploitation cost.

A strategic planning of this policy is based on an eventual set up of a water development fund as to ensure investment in water sector through government contributions, taxes, charges, and fines determined by the current water law.



## **5 SELECTED CASE STUDY: PERFORMANCE OF AN IWRM APPROACH IN RURAL WATER SUPPLY SCHEMES OF THE DRC**

### ***5.1 Introduction***

Following a substantial drop in water supply and sanitation schemes which were set up during the international water decade (1980-1990) in DRC, exacerbate population growth and related water born diseases, initiatives were undertaken as to improve access to safe drinking water supply and sanitation and to alleviate poverty.

One of these initiatives is the rural water supply and sanitation programme aiming at improving water supply efficiency which is jointly held by the SNHR, SANRU and other NGOs involved in rural water supply and sanitation. The operational unit of Village Level Organization and Maintenance policy for these interventions is the Rural Zone of Health (ZSR). Up to date, the ZSR totalizes 514 circumscriptions called Rural Zone Health where the organisms of water supply and sanitation work in good collaboration and their intervention policy is vested in the following objectives:

- Assessing water resources availability in rural areas
- Carrying out the activities of water supply and sanitation in rural areas by creating, repairing and rehabilitating fountains, wells, boreholes, pumps etc.
- Initiating the best practices for water resources management and conservation, rain water harvesting.
- Initiating training of local people in regards to water resources issues and primary health care.
- Promoting creation of local committee developments.
- Assisting local community in conflict resolutions

Through this case study, we intend to bring out the performance of the approaches and tools used towards IWRM concept in rural water supply and sanitation; this through analysis of the IWRM attributes as partially or fully applied on the ground.

### ***5.2 Frameworks of rural water supply and sanitation in DRC***

The sector of water supply and sanitation in DRC is subdivided into two sub sectors representing Urban Water Supply and Sanitation, and Rural Water Supply and Sanitation. The criteria for this repartition is based on the number of people living in the area, which is up to 100,000 inhabitants for the rural area and more than 100,000 inhabitants for the urban area. Both sectors work under the coordination mechanisms specified by Ordinance Law No 81-023 of 14 Feb 1981 which establishes roles and duties of an inter-ministerial corporation for water and sanitation actions at country level, and the Decree No 03-027

of September 2003 which specifies the attributions for government ministries, department and specialized units working in water sector.

Three types of operators deal with water supply and sanitation in rural area. These are public institutions (SNHR under the Ministry of Rural Development and the Ministry of Public Health with its specialized programmes such as ZSR and SANRU), private institutions and NGOs.

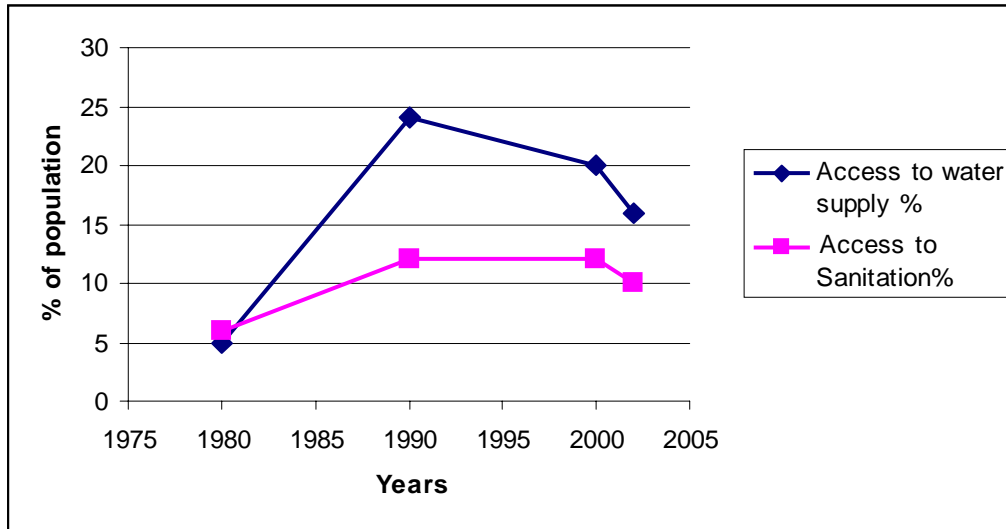
SNHR was set up in 1983, and is under the supervisory authority of the Ministry of Rural Development. Its role is to: (1) make an inventory of water resources in rural areas; (2) construct drinking water supply structures for the rural populations; and (3) train the population in the servicing and maintenance of the drinking water structures constructed. SNHR has 17 stations countrywide, and in addition to its usual activities, it has since 1998, constructed irrigation structures. Its action is limited by its weak financial resources, and emphasis is laid on the construction of structures to the detriment of programming and maintenance.

SNHR faces several types of constraints including: (1) institutional disfunctioning due to the multiplicity of supervisory authorities and weakness of the water institutional framework; (2) inadequate financial resources; and (3) high staff turnover with the departure of many highly qualified staff to the private sector or NGOs. Since 2001, the following weaknesses are noted: (1) several officers have been replaced by unqualified and inexperienced staff; (2) complete lack of logistics and technical means; (3) lack of planning and coordination of actions; (4) inadequate number of operational stations to conveniently cover the whole country; and (5) weak technical and human capacities (lack of skills, information and training at all the levels). It should, however, be noted that the institutional framework of SNHR needs to change, and reflection is ongoing within MDR to redefine its missions which should lay more emphasis on coordination and supervision of the water sector in rural areas.

However, in light of good examples of water management in the country, the activities of SNHR in joint collaboration with ZSR need to be mentioned. SNHR and ZSR are two institutions which are focused on improving access to clean and safe water especially in rural areas.

### ***5.3 Past and present status of rural water supply in DRC***

Following the international water decade (1980-1990), the DRC considerably implemented water supply and sanitation infrastructures and thus, improved access to safe drinking water. This effort was however interrupted with the 1990s turmoil and suspension of the external support as shown in the figure 3.



**Figure 5.1. Trend of WSS in DRC**

According to 1990's estimation, water supply in rural areas included 5118 developed springs, with an approximated discharge of 3L/s; 1.595 wells; 128 boreholes equipped with pumps. These water supply infrastructures had been serving about 4.1 Millions of peoples over a total number of 20.3 Millions in rural areas, which represented a supply rate of 20%. At the end of 1990, Beside the SNHR efforts, the NGOs (SANRU, UNICEF, and OXFAM) involved in rural water supply of the rural zone of health (ZSR) attained about 2.5 Millions inhabitants more constructing up 3011 developed springs, 866 wells and 78 boreholes equipped with pumps

The global objective was to increase access to clean water while improving the sanitation conditions in supported villages. Under SANRU components, the specific objectives targeted 1500 water sources to be constructed, 300 wells with pumps to be repaired, and 2000 model villages with superior sanitation, 12 national trainers on water and sanitation control to be trained, 59 rural based water and sanitation engineers to be trained, village clean standards to be met and micro credit to be granted,

Under this component, an increase in access to water from approximately 30% (baseline) to 68% in supported zones. These numbers represent approximately 3,184,622 persons or 5% of the population of DRC. Effective strategies included rehabilitating water sources proximal to villages and repairing pumps and wells. By January 2006, SANRU had accomplished the following: (1) construction/rehabilitation of 2,133 clean water sources (springs) out of 1,500 planned; (2) installation of 115 water pumps out of 150 planned; (3) construction of 121 ventilated latrines out of the 210 planned; (4) integration of Water and Sanitation in 2,520 villages out of the 2,640 planned; (5) distribution of some 2,000 Clean Community Awards; (6) construction and installation of 19 incinerators, 16 of which in iron and 3 in masonry; and (7) initiation of micro-credit projects for clean villages in 9 villages out of the 9 planned. As a result of these and other efforts, the percentage of population with access to safe potable water has increased from 32.6% in 2001 to 68.3 % in 2005, i.e. far above the national average. Available data also indicate that this component has succeeded in reducing the incidence and prevalence of water-

born diseases in many sites and contributed to improving credibility and utilization of health services.

#### **5.4 Approaches, instruments and incentives towards IWRM**

This section seeks to examine the measures in place and in use. The key to improved efficiency lied in setting up mechanisms for changing peoples' attitudes and behaviour towards water use. It required a package of many tools selected to meet the local circumstances and focused on key target groups. Such tools range from, political will and cooperation, technology improvements, training, regulations to public awareness and incentives. Analysis of this section indicates that most actors, especially the water utilities in rural areas, are already implementing a number of measures towards IWRM.

##### **Political will and cooperation**

Since 2002, the Congolese government has embarked in political and institutional reforms.<sup>8</sup> In rural water sector, strategies under the PMURR and DSCRIP master plans have been initiated with financial support from multilateral aids agencies and other external partners. These interventions aim at improving access to safe drinking water through: rehabilitation and construction of water supply and sanitation infrastructures, capacity building and institutional strengthening. These policies are being accompanied by the search for and promotion of appropriate technologies, while popularizing good practices in community management. Development of training programmes to strengthen the operational capacities of the technicians of the sector, as well as health workers of the zone, including sanitary engineers and field workers.

##### **Stakeholders participation**

After discovering the unsustainability of water projects, the ZSR and SNHR opted for a participatory approach involving men and women in rehabilitation and maintenance of water supply and sanitation facilities. With regard to community participation, the use of the national health policy which calls for the establishment of community health committees (10-15 households) and network outreach works helped in mobilizing communities for health campaigns, sanitary education, and control.

##### **Awareness raising and incentives**

The state of abundant water resources in DRC as compared to other African countries is a backbone of a cultural background and beliefs which take water for granted. Historically, water in most of Congolese traditions and culture is regarded as a free gift from God. This belief leads to most Congolese questioning the practice of paying for water. This has

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<sup>8</sup> Decree No. 136/2002 of 30 October 2002

been a major cause of failures observed in most rural water supply schemes. As such, water providers working in rural areas had a mammoth task to play in changing the behaviour and attitude of peoples towards water and also ensure that communities realize and appreciate the fact that water is finite and in fact is an economic good and must be treated as such. Furthermore, the attitude towards purifier role of water and sanitation were to be dealt with. In this respect, the Water and Sanitation component promoted five key behaviors, namely: (1) Payment of a reasonable monthly fee as motive of access to water services (2) the washing of hands before eating or after defecation using water running from a container, soap and dry air; (3) storage of drinking water out of the reach of children; (4) disposal of children's feces immediately after defecation in latrines; (5) enclosing of goats, pigs and other domestic animals in adequate enclosures.

A Clean Community Awards was initiated as to encourage RZH to organize clean village campaigns. This was a competition, with a limited number of winners, but rather a campaign to reward all villages that successfully meet the following minimum criteria: 90% of households have a functional pit latrine; 75% of households have access to safe water; and 75% of households have easy access to properly maintained rubbish pits. Villages which successfully meet and maintain these criteria were to receive a "clean village" flag to display in their village. An annual monitoring by the health center and village development committee was carried to measure if they maintain the standard. Successful villages were provided with an annual "merit badge" to indicate the continuation of their work. Villages that did not meet the criteria were put on "probation" and given three months to correct identified problems.

### **Conflict resolution**

Conflicts can occur for many reasons in the water sector and areas for potential conflict include various aspects of social interaction. To deal with these aspects a resolution approach based on finding amicable solution mechanism with a support from the Rural Zone Health (ZSR) agents was found efficient. Involvement of church leaders and leaders of opinion was found successful.

### **Training**

Delivery of vocational training and best practices to ensure maintenance, monitoring and service delivery was implemented through a wide range of activities with the view to increasing access to potable water and ensuring village sanitation. The Water and Sanitation Component in the rural areas provided training in the establishment of simple water/sanitation devices, such as spring capping, shallow wells construction, rainwater harvesting, Ventilated Improved Pit latrines (VIP) and the implementation of village sanitation programs. For more complex interventions, such as adduction systems and

drilled wells, the link was ensured with partners or projects that could provide appropriate technical or financial assistance. The key training provided is summarized in the table below.

**Table 5.1 Vocational trainings for IWRM in Rural WSS**

Training module	Place and Date	Target group
Training in construction of ventilated Improved Pit(VIP) latrines	Bolenge, January-March 2004	12 sanitation technicians from 11 health zones
Training in water and sanitation	Kisantu, April 15-19, 2002	13 national trainers
Training in water and sanitation,	Vanga Dec 2002-Feb2003	10 water and sanitation technicians
Training in water and sanitation	Tshikaji, Dec 2002-Feb2003	10 sanitation technicians
Training in operation research,	Kimpese, Dec 2002-Feb2003	7 health cadres
Training in operation research,	Kikwit, Dec 2002-Feb2003	7 health cadres
Training in PCIME-C and hygiene	, Kimpese	6 service providers
Training in PCIME-C and hygiene,	Mbuji-Mayi, March-May 2003	16 service providers
Training in technics for adult training,	Kisantu, March-May 2003	14 cadres from the National Team of Trainers in Water and Sanitation
Training in construction of latrines,	Bolenge, March-May 2003	12 water and sanitation technicians from 11 health zones
Training in repair of water pumps	Kangu, March-May 2003	13 water and sanitation technicians from 13 health zones
Training in spring capping,	Rutshuru, March-May 2003	12 cadres from 12 health zones
Training in construction of ventilated improved pit (VIP) latrines,	Bolenge, January-March 2004	12 sanitation technicians from 11 health zones
Training in construction and maintenance of water pumps,	Kangu, January-March 2004	13 sanitation technicians from 13 health zones
Training in construction of spring capping,	Rutshuru, January-March 2004	12 water and sanitation technicians from 12 health zones
Training in construction of VIP latrines,	Bikoro, April-Juin 2004	8 water and sanitation technicians from 4 health

		zones
Training in construction of VIP latrines,	Vanga, April-Juin 2004	12 water and sanitation technicians from 6 health zones
Training in knowledge evaluation and up-date,	Gemena, April-Juin 2004	11 cadres from 11 health zones
Training in construction and vulgarization of VIP latrines,	Kamina, January-March 2004	9 water and sanitation technicians from 9 health zones
Training in management of financial resources	Kikwit and Karawa, July-September 2004	79 cadres from 14 health zones
Training in management principles	Kikongo, Masa, Kisangani, and Karawa, July-September 2004	49 cadres from 4 health zones
Training in financial management of health zones	at Boma and Yakusu, January-March 2004	54 accountants from 10 health zones
Training in financial management of health zones	Kamina, April – June 2004	27 accountants from 4 health zones

## **5.5 Lessons learnt**

Overall achievement of rural water and sanitation objectives through various programmes (SNHR, SANRU, Private interventions) was highly satisfactory and above initial expectations. Analysis of this success made it possible to draw a set of useful lessons.

1. There is no single approach towards IWRM implementation and significant contribution to developing practical working tools is more easily realized by using field experience and problem solving approach rather than through theoretic and didactic methods;
2. The need for a proper analysis of the socio-economic context in which the system operates is crucial when planning IWRM implementation;
3. Stakeholder involvement and empowerment through training is a key to success in the process of IWRM implementation;
4. The need for adequate incentives for stakeholders is crucial in all operations;
5. Behavior change communication (BCC) activities are most effective when implemented as part of a community-based approach.
6. Durable water projects such as adduction systems, drilled wells and pumps must be discussed in detail with all segments of the population before starting.

## **6 CONCLUSION AND RECOMMENDATIONS**

The overall objective of this study was to assess the level of IWRM implementation in the DRC. To this end, an assessment using a descriptive approach based on questionnaire, interviews and analysis of relevant documentations to IWRM implementation at country level was carried out.

It comes out from this assessment the following remarks:

1. The general framework of legislation on water resources dates from colonial period with very little reforms and does not encompass the current challenges of IWRM.
2. Although the policy on water resources depict major aspects of IWRM, it appears however that, this policy does not have the legal stand as it does not much with most of the legislation elaborated from colonial period. Furthermore, the process of elaboration of this policy does not reflect the IWRM requirements; most of them emanating from a fragmented vision of institutional set up and are demand driven.
3. The organizational framework is dealt with by many ministries with little coordination or collaboration, thus generating a situation of conflicting role and inefficiency.
4. Although the DRC had made greater efforts to built and improve water sector infrastructures for the decade 1980-1990, the efficiency level of water supply and sanitation has decreased due to (i) lack of clear policies and supporting legislation(ii) a multitude of stakeholders in the water and sanitation sector, often with unclear roles, overlapping of functions, and total absence of coordination; (iii) inadequate funding; and with the suspension of co-operation programmes (iv) water sector institutions weakened, with an unmotivated staff. Currently, the urban drinking water service rate is only 35%, as against 70% in 1990, while the service rate in rural areas stands at 17%, as against 24% in 1991.
5. On the basis of ongoing reforms, the milestone instruments of IWRM implementation have been provided and are in awaiting of a parliamentary endorsement. These are: Water code, Water policy, Water strategy and Norms and Directives of water.

Considering the above mentioned, it comes out that the IWRM implementation in the DRC is at its infancy and efforts need to be channeled to bring this process further for a sound water resources management and implementation. For an effective implementation of IWRM in the mid term, these efforts will concern:

1. Promulgation and operationalization of new laws and regulations for IWRM implementation at country level. This includes:
  - Promulgation and operationalization of the Water Code;
  - Promulgation and operationalization of the National Water Strategy;
  - Promulgation and operationalization of the National Water Policy;
  - Promulgation and operationalization of the National Norms and Directives of Water, as well as rules and principles of water resources management.
2. Creation of a functioning consortium of stakeholders involved in decision making, with representation of all sections of society, and a good gender balance.



3. Setting up organizational structures at basin and sub-basin levels based on hydrological boundaries with clear roles to enable decision making at the lowest appropriate level.
4. Establishment of a national network of water professionals and to use them efficiently.
5. Establishment of programmes for awareness raising and to carry out actions.

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## 8 APPENDICES

### 8.1 List of resource persons

N°	NOM + POSTNOM	Gender	INSTITUTION	Contacts
03	Augustin MAWALALA NZOLA MESO	M	Ministry of Environnement	0997592965 <a href="mailto:augumawalala@yahoo.fr">augumawalala@yahoo.fr</a>
04	Augustin MUKUNA MWADIANVITA	M	SENAHUP/MDR	0851495519 <a href="mailto:augustin_mukuna@yahoo.fr">augustin_mukuna@yahoo.fr</a>
05	BAKAJIKI MUBIAYI	M	Ministry of Environnement	0810691549 bakajikamubiayi yahoo.fr
06	Bavon MANGOLO	M	REGIDESO	08989915779 <a href="mailto:bmangolo@yahoo.fr">bmangolo@yahoo.fr</a>
08	Charles MBUTAMUNTU LWANGA	M	C.N.A.E.A	0990312932 mbutamuntul@yahoo.fr
10	Crispin SEDEKE OKWUL	M	Ministry of Environnement	0999922134 crisedeke@yahoo.fr
11	Bertin BAGULA	M	IBN	0999923829
13	Gaston ATIBU	M	C.N.E.	0817944227
14	Isidore PINGANAY SABWA	M	Ministry of planning	09999144200 pinganaysa@yahoo.fr
16	Joseph LITITIYO AFATA	M	Ministry of Environnement	0998188039
19	Madame Chantal NKEY NGONDO	F	Ministry of Environnement	0990297065 <a href="mailto:chantalnkey@yahoo.fr">chantalnkey@yahoo.fr</a>
20	Madame Charlotte MWARABU Kash	F	PAM/WFP	0817006719
23	Octave JUAKALI KAMALE	M	FCBN/IBN	0998188363 <a href="mailto:deudonne_jk@yahoo.fr">deudonne_jk@yahoo.fr</a>
26	Polydor MUNTU TCHIMOA KANDA	M	REGIDESO	0815014654 <a href="mailto:muntupoly@hotmail.com">muntupoly@hotmail.com</a>
29	Roger KABONGO KATHATSHI	M	Ministry of Environnement	0819071497 <a href="mailto:rogerkathatshi@yahoo.fr">rogerkathatshi@yahoo.fr</a>
30	Valence NGASIA LELA	F	Ministry of Environnement	0998418541 <a href="mailto:ngasiava@yahoo.fr">ngasiava@yahoo.fr</a>
31	Valentin MWAMBA WA MBAYI	M	Ministry of Energy	0998273562
32	Malenge Ntoya	M	Ministry of Environnement	
33	Mananga Ma Mbenza	M	Ministry of Agriculture	0817398362
34	Arly Batumbo	M	METTELSAT	
35	Rose Mukonkole	F	Ministry of Environnement	0815418642
36	Victorine Mbadu	F	University of Kinshasa	09988846427
37	Jean Marie Tshitenge	M	University of Kinshasa	0997000375
38	Fidele Lupweka	M	University of Kinshasa	0810814362
39	Okitolemo Henry	M	Ministry of Environnement	0999912245
40	Musoy	M	DPHI/ CBSI	0815203668, musoyibay@yahoo
41	Celestin Koko	M	NTEAP	0818997024
42	Victor Vundu	M	Expert juriste	<a href="mailto:victorvundu@yahoo.fr">victorvundu@yahoo.fr</a> 0815058463

## **8.2 Stakeholders' workshop**

### **RAPPORT DE L'ATELIER SUR L'EVALUATION DU NIVEAU DE MISE EN OEUVRE DE LA GESTION INTEGREE DES RESSOURCES EN EAU EN RDC**

**Par Chantal Nkey  
Rapporteuse**

#### I. INTRODUCTION

Dans le cadre du Projet de Formation appliquée, un des huit projets du programme de vision commune de l'Initiative du Bassin du Nil, il s'est tenu ce vendredi 12 novembre de l'an deux mil huit, dans la salle de conférence du cadre du Comité National d'Action de l'Eau et Assainissement à Kinshasa, un atelier d'évaluation du niveau de mise en œuvre de la gestion Intégrée des Ressources en Eau GIRE en RDC.

Le présent rapport retrace les points forts de cette journée en donnant la synthèse, les résultats et les questions clé du débat ainsi que les recommandations pertinentes formulées à l'issue des travaux.

La liste des personnes qui y ont participé est annexée au présent rapport. Il convient de noter de prime abord que les personnes invitées ont été sélectionnées sur base de leur expertise.

Au total, 15 personnes (dont 4 femmes) avaient participé à cet atelier les débats et discussion issue de l'atelier vont permettre d'améliorer la qualité du document de travail.

#### II. OBJECTIF

Cet atelier avait pour objectif de valider les résultats de l'étude sur l'évaluation du niveau de mise en œuvre de la gestion Intégrée des Ressources en Eau GIRE en RDC

#### IV. DEROULEMENT DE L'ATELIER

Après le mot introductif et de bienvenu de Monsieur SEDEKE, représentant du Directeur des Ressources en Eau et TAC Member, les travaux proprement dits ont commencé.

La méthodologie a consisté en la mise à disposition des participants des supports documentaires et les présentations du jour, suivis des questions d'éclaircissement et d'un débat. La fin de l'atelier a été couronnée par un rapport général.

Il y a eu trois présentations consécutives à :

- la présentation générale de l'Initiative du bassin du Nil (le contexte, l'objectif et la structure) par Monsieur SEDEKE
- le Système d'Aide à l'appui au Développement (DESS) par le professeur BAGULA
- l'évaluation du niveau de la mise en œuvre de la gestion Intégrée des Ressources en Eau GIRE en RDC par Monsieur Tshimanga Raphaël

##### **1. Présentation générale de l'Initiative du bassin du Nil (le contexte, l'objectif et la structure)**

Au cours de cette présentation, le contexte, l'objectif et la structure de l'IBN ont été présentés aux participants. L'IBN est un regroupement de 9 pays membres effectifs et d'un membre observateur ; elle a

en son sein deux grands programmes, un programme d'action commune avec huit projets dont fait partie le présent projet et un programme d'action subsidiaire. L'objectif général poursuivi par l'IBN est de gérer ensemble les ressources du Bassin du Nil et en faire un partage équitable. L'IBN est composée d'un conseil de ministres de Bassin du Nil (NILCOM) dont la présidence est tenue actuellement par notre ministre de l'Environnement, Conservation de la Nature et Tourisme, aussi d'un Nil Tac qui est une réunion des responsables des Administrations à charge de l'eau des différents pays et enfin du Secrétariat Exécutif au niveau régional avec comme UNOPS facilitateur financier au niveau régional.

## **2. le Système d'Aide à l'appui au Développement (DESS) par le professeur BAGULA**

Les faiblesses

### **3. l'évaluation du niveau de la mise en œuvre de la gestion Intégrée des Ressources en Eau GIRE en RDC par Monsieur Tshimanga Raphaël**

Cet exposé a connu deux temps forts à savoir :

- **1.** la présentation de l'étude qui reprend le contexte et l'importance de la GIRE,  
L'objectif de l'étude, l'approche méthodologique ainsi que les résultats de l'étude.
- **2.** Les travaux des groupes

#### **1. présentation de l'étude**

GIRE concept mis en place pour répondre à l'appel du sommet mondial sur le développement durable en 2005, ce concept s'inscrit en opposition de la gestion sectorielle, fragmentaire et centralisée des ressources en eau. La RDC membre signataire des différentes conventions de Rio pour un développement durable, reconnaît la pertinence d'une approche intégrée de gestion des ressources en eau. L'objectif général poursuivi par cette étude est l'évaluation du niveau de mise en œuvre du concept GIRE en RDC et l'approche méthodologique utilisée est basé sur la revue de la littérature, l'enquête et les interviews. D'une manière générale la mise en œuvre de la GIRE en RDC est encore à l'état rudimentaire

Les résultats de l'étude se présente comme suit :

A. Instrument de gestion des ressources en eau en RDC : il existe quatre principes de la GIRE dont la compréhension générale traduit non seulement son niveau de connaissance, mais aussi exprime une prise de conscience vers la mise en œuvre du processus. Il sied de noter qu'en RDC suivant l'échantillon prélevé 64% d'enquêtés ont une connaissances précises de la GIRE, 23% ont entendu parlé de GIRE en 13% n'ont rien entendu de la GIRE ; pour ce qui est de la compréhension générale de 4 principes de la GIRE 8% ont une compréhension nul, 27% une compréhension pauvre, 38% moyenne compréhension et 27% ont une compréhension élevée.

B. Les fonctions de la GIRE et attributions institutionnelles

Il ressort du texte la présence de plusieurs acteurs institutionnels et privés responsables jouant différents Mandats et rôle.

Les instruments de gestion des ressources en eau en RDC sont notamment :

La Constitution de la RDC ; le plan directeur de fourniture d'eau et d'assainissement 1991-2010 ; Plan National d'Action Environnementale 1997-2002 ; Stratégie Nationale et Plan d'Action de la Biodiversité

### C. Matrice des fonctions de la GIRE et leur niveau de mise en œuvre

Les fonctions de la GIRE et attributions institutionnelles ainsi que la matrice des fonctions GIRE et le niveau de mise en œuvre de la GIRE ont fait l'objet de travaux et discussion en groupe.

Le débat après l'exposé a tourné autour de l'existence d'un Canevas du travail suivis par l'auteur de l'étude, de la matière à valider qui devait être ressortie sous forme des stratégies et non un état des lieux de la GIRE en RDC ainsi que l'existence ou l'inexistence des lois sur les eaux internes et les eaux transfrontalières. Aussi, sur la coordination non participative de la GIRE.

Reprenant la parole, l'auteur de l'étude a répondu aux questions en confirmant l'existence d'un canevas de travail en rapport avec son travail ainsi la matière à valider compte tenu même de l'objectif poursuivi par l'étude l'état de lieu s'avère nécessaire pour cette évaluation et seulement après que les stratégies à mettre en place pourrons faire l'objet d'une suite de cette étude.

S'agissant des textes de lois sur les eaux, il n'existe que des arrêtés et des décrets pendant que le code de l'eau est en attente d'approbation au parlement. Il sied de noter aussi qu'il n'existe pas des lois spécifiques sur les eaux transfrontalières, le pays s'atèle plus la loi Bakajika.

## **2. Les travaux des groupes**

Les participants se sont repartis en 2 groupes de travail pour amender et compléter la matrice des fonctions GIRE et son niveau de mise en œuvre selon les objectifs fixés.

Le premier groupe a travaillé sur les aspects légaux, institutionnels et les conventions internationales.

Le second groupe s'est consacré sur les outils de Gestion

Après une pause café, les travaux en groupe se sont poursuivis

Chaque groupe de travail a présenté en plénière des propositions suivantes :

### GROUPE I

#### .Constitution du Groupe

Président : Monsieur OKITO

Rapporteur : Madame Mireille NGOMA

Thèmes : - Cadre légal

- Cadre Institutionnel

- Convention Internationale

### Cadre Légal

- Contradiction sur l'existence de la loi sur l'eau et absence du code dans l'observation (l'existence du projet de loi sur l'eau)
- Niveau de relation sur la loi du 1<sup>er</sup> août 1980. (un décret et non le code)

### Renforcement de la loi

Le projet de loi sur l'eau prévoit des pénalités (propositions)

### Mécanismes sur la résolution des conflits

- proposition non définie (observation, renvoi au projet de loi sur l'eau)

### Création des zones de gestion

Observation : loi caduque

### Priorité d'utilisation de l'eau

Recommandation : le projet de loi sur l'eau doit prévoir les priorités d'utilisation de l'eau (à reprendre dans l'observation)

### Equité

Pas d'équité.

Recommandation : l'Etat doit fournir d'effort pour alimenter toute la population d'eau potable, répartition inégale des ressources naturelles (à reprendre dans l'observation)

### Qualité de Standard pour l'utilisation variée

Description : Augmentation 'opération de contrôle et d'évaluation.

Recommandation : prévoir des laboratoires d'analyse de la qualité d'eau (observation)

### Conformité

Quantité sans valeur (prix), traduire les prix en franc fiscal ou en dollar

### Mécanisme de protection des utilisateurs

La loi existe mais il y a une faiblesse mais il y a une faiblesse au niveau d'application (observation)

### Les Eaux Transfrontalières

Le Cadre légal existe mais nécessité d'actualiser les textes légaux et réglementaires

### Permis de déversement des déchets toxique

**Statut** : il existe des taxes pour la pollution annuelle

**Description** : la taxe est perçue par le Ministère de l'environnement

**Observation** : manque de suivi, pas de moyens financiers et techniques

### Mécanismes de renforcement de législation de l'eau

Statut : existe

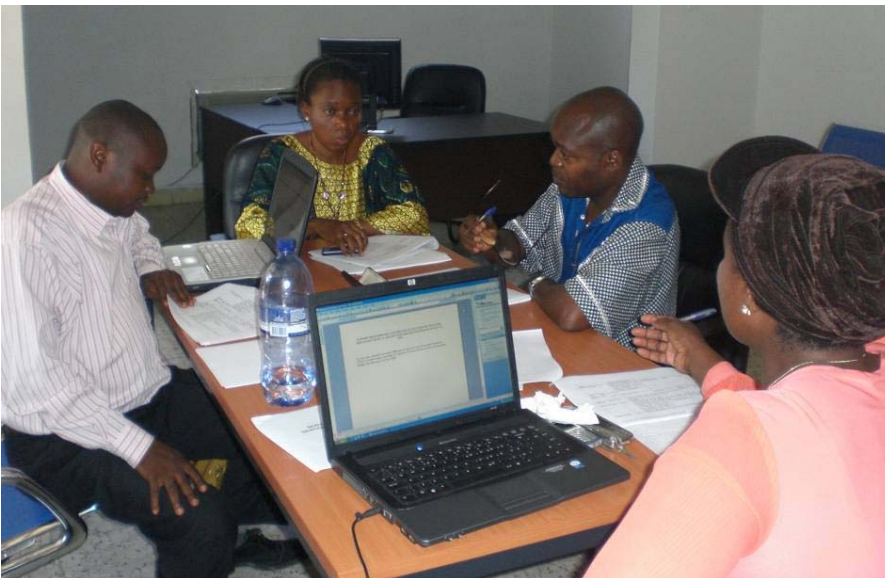
Description et objectif : élaboration du code de l'eau pour réglementer le secteur de l'eau

Indicateur

Décret portant restructuration du CNAEA

Adoption et promulgation

**Selected pictures of participants to the workshop**







### 8.3 Questionnaire

QUESTIONNAIRE  
No -----

#### INITIATIVE DU BASSIN DU NIL

#### PROJET DE FORMATION APPLIQUEE

#### QUESTIONNAIRE POUR L'ETUDE DU NIVEAU DE MISE EN OEUVRE DE LA GESTION INTEGREE DES RESSOURCES EN EAU DANS LES PAYS DU BASSIN DU NIL

A Monsieur/Madame

.....

Nous avons l'honneur de recourir à votre expertise en vue de récolter les informations relatives à la mise en œuvre de la GIRE en République Démocratique du Congo.

La présente enquête est une initiative du Projet de Formation Appliquée des pays du bassin du Nil en vue d'évaluer des efforts et des lacunes dans le processus de mise en œuvre de la GIRE.

Veillez trouver ci après des questions relatives à cette enquête. Votre contribution est vivement souhaitée en prévision d'un atelier de validation qui sera tenu sur base des informations obtenues de cette évaluation.

Nous vous serons grés de recevoir votre contribution dans l'intervalle d'une semaine dès la réception de ce questionnaire.

Pour tout éclaircissement, veuillez contacter les personnes ci après :

- Ir. Raphaël Tshimanga  
Email : [raphtm@yahoo.fr](mailto:raphtm@yahoo.fr) , Tel : 0991882512
- Prof. Vincent Lukanda  
Email : [vlukanda@yahoo.fr](mailto:vlukanda@yahoo.fr) , Tel : 0997034716

- NB. La remise du questionnaire peut se faire au secrétariat de la Direction des Ressources en Eau : 35, Av. PUMBU, Kin/Gombe. Tel 0998418541

Veuillez agréer l'expression de notre franche collaboration

Pour l'étude en RDC

Ir. Raphaël Tshimanga

**PARTIE I: INFORMATION SUR LE REpondant**

1. Nom-----
2. Nom et adresse de l'Institution-----  
-----  
-----
3. Titre -----
4. Profession -----
5. Années de service dans l'Organisation-----

**PARTIE II: Etat de la gestion des ressources en eau dans le pays**

1. Quelles sont les principales sources de l'eau dans votre pays pour les usages suivants:

Agriculture-----  
Usage domestique-----  
Industrie-----

2. Quels sont les taux de demande et de consommation pour les utilisations ci-dessus?

-----  
-----

3. Quelles sont les quantités potentielles des ressources en eau dans votre pays?

-----  
-----

4. Quel est le cadre institutionnel pour la gestion des ressources en eau (Quelles sont les institutions qui, d'une manière ou d'une autre, s'occupent des questions en rapport avec l'eau)?

-----  
-----

5. Quelle (s) institution(s) est/sont responsable (s) de la planification des ressources en eau dans le pays?

-----  
-----

6. Y a-t-il une stratégie de gestion des ressources en eau dans le pays?

Oui----- Non-----

7. Si oui, Quelles en sont les caractéristiques principales? Abordent-elles les problèmes suivants: (Veuillez cocher)

- Approvisionnement en eau
- Gestion de la demande
- Agriculture
- Tarification de l'eau
- Irrigation
- Gestion de l'eau privée
- Instruments économiques



7. A Quand espérez-vous que de telles difficultés seront surmontées ?

Quelques lacunes seront comblées dans un proche avenir ; comme:

-----  
-----

D'autres lacunes nécessiteront plus de temps pour être comblées; comme :

-----  
-----  
-----

D'autres sortes d'informations et données seront difficiles à obtenir même après un temps ; comme:

-----  
-----

8. Indiquer si le système de données actuel (ou projeté) comprend (ou va comprendre) les types de données ou informations suivants:

Type de données/informations	Inclus maintenant	Pas inclus	Seront inclus	
			Bientôt	Plus tard
Estimations des différentes sources d'eau	.....	.....	.....	.....
Qualité de chaque source d'eau	.....	.....	.....	.....
Intensité d'utilisation de l'eau dans les différents secteurs, sous-secteurs, cultures	.....	.....	.....	.....
Options d'approvisionnement en eau dans le futur	.....	.....	.....	.....
Estimation de la demande actuelle en eau pour les différents secteurs	.....	.....	.....	.....
Prévision sectorielle et totale de la demande en eau dans le futur	.....	.....	.....	.....
Déséquilibres actuels et futurs entre la demande et l'approvisionnement en eau	.....	.....	.....	.....
Adéquation et qualité de l'eau fournie a chaque secteur et sous-secteur	.....	.....	.....	.....
Fréquence des pénuries d'eau, panne des stations de traitement d'eau, suspension du service normal ou périodes de rationnement.	.....	.....	.....	.....
Précautions des ménages pour s'assurer un approvisionnement sain en eau potable, et ses coûts	.....	.....	.....	.....
Sources supplémentaires d'eau pour le secteur industriel et le coût	.....	.....	.....	.....
Sources de gaspillage/fuites d'eau et estimations	.....	.....	.....	.....
Quantité et qualité des eaux usées et possibilités de réutilisation	.....	.....	.....	.....
Nombre de forages/puits fonctionnels et secs	.....	.....	.....	.....
Unités de surveillance d'eau et leur répartition (unités centrales ou locales)	.....	.....	.....	.....
Institutions impliquées dans l'approvisionnement en eau, la distribution, la gestion, le contrôle, etc. et leurs interrelations.	.....	.....	.....	.....
Institutions impliquées dans la collecte des données sur l'eau, vérification, analyse, organisation, dissémination, etc.	.....	.....	.....	.....
Les utilisateurs des données générées	.....	.....	.....	.....
Investissements actuels et projetés dans les projets	.....	.....	.....	.....

Type de données/informations	Inclus maintenant	Pas inclus	Seront inclus	
			Bientôt	Plus tard
d'approvisionnement en eau				
Disponibilité actuelle et future de différentes qualifications pour la main d'oeuvre dans les institutions qui s'occupent de l'eau	.....	.....	.....	.....
Taille des budgets alloués à la formation et l'éducation pour les différents niveaux de la main d'œuvre dans tous les secteurs.	.....	.....	.....	.....
Législation en rapport avec les droits sur l'eau, utilisation de l'eau, recyclage de l'eau et réutilisation, distribution de l'eau, charges sur l'eau, marchés d'eau, syndicats de l'eau	.....	.....	.....	.....
Protection, gestion des conflits entre les utilisateurs d'eau, etc.	.....	.....	.....	.....
Service de la dette pour les projets d'eau	.....	.....	.....	.....
Estimations des différents types de coûts d'approvisionnement en eau pour chaque secteur et sous-secteur:				
- Coûts d'exploitation et de maintenance	.....	.....	.....	.....
- Coût d'investissement	.....	.....	.....	.....
- Coût de remplacement du capital	.....	.....	.....	.....
- Coût total	.....	.....	.....	.....
Estimations des quantités d'eaux usées traitées et le coût	.....	.....	.....	.....
Coûts d'exploitation et coûts de pompage des puits/forages	.....	.....	.....	.....
Coût de recyclage de l'eau et ses canaux	.....	.....	.....	.....
Subsides pour l'approvisionnement en eau pour chaque secteur (y compris les subsides pour l'énergie)	.....	.....	.....	.....
Les tarifs d'eau et charges pour les différents usages	.....	.....	.....	.....
Incitations économiques pour accroître l'efficacité dans l'utilisation de l'eau (taxes, subsides, dons, dégrèvement des taxes, etc.)	.....	.....	.....	.....
Tendance de la privatisation et ses perspectives dans les secteurs de l'approvisionnement et distribution de l'eau	.....	.....	.....	.....
Taille du marché d'eau, son domaine, sa structure, ses prix et ses limitations	.....	.....	.....	.....
Sources de pollution de l'eau, son intensité, ses effets sur l'approvisionnement en eau douce et son utilisation	.....	.....	.....	.....
Incidences des maladies liées à l'eau et la détérioration de la santé	.....	.....	.....	.....
Effets induits positifs de l'utilisation et du développement de l'eau				
- Recharge des aquifères souterrains	.....	.....	.....	.....
- Croissance de la productivité de l'élevage	.....	.....	.....	.....
- Bénéfices sociaux (augmentation de l'emploi, économie des efforts et du temps pour les femmes)	.....	.....	.....	.....
Divers effets induits négatifs de l'eau:				
- Effets sur les usagers de l'eau en aval	.....	.....	.....	.....
- Effets sur la navigation	.....	.....	.....	.....

Type de données/informations	Inclus maintenant	Pas inclus	Seront inclus	
			Bientôt	Plus tard
- Effets sur la production de l'hydroélectricité	.....	.....	.....	.....
- Effets sur la pêche et les écosystèmes	.....	.....	.....	.....
- Effets sur les habitats et la faune-flore	.....	.....	.....	.....
Différentes ONGs impliquées dans l'utilisation et le développement de l'eau	.....	.....	.....	.....
Réformes actuelles et prévues et changements dans :				
- L'efficacité technique de l'approvisionnement en eau et l'utilisation de l'eau	.....	.....	.....	.....
- Organisation des institutions s'occupant de l'eau	.....	.....	.....	.....
- Capacités et qualifications de la main d'œuvre	.....	.....	.....	.....
- Législation et régulations en rapport avec l'eau	.....	.....	.....	.....
- Charges sur l'eau	.....	.....	.....	.....
- Incitations économiques pour renforcer l'eau ( ?)	.....	.....	.....	.....
- Assolements agricoles	.....	.....	.....	.....

#### **PARTIE IV. LE CONCEPT DE GESTION INTEGRE DES RESSOURCES EN EAU (GIRE)**

##### **Niveau de compréhension du concept**

1. Etes-vous familier avec la GIRE ?
  - Oui, je sais ce que c'est la GIRE
  - Oui, j'ai entendu parler de la GIRE
  - Non, je ne connais rien de la GIRE
2. Comment évaluez-vous le niveau de compréhension des concepts clés suivants de GIRE dans votre communauté? 0= Nul, 1= médiocre, 2= Moyen, 3= Elevé.

	0	1	2	3
L'eau douce est une ressource limitée et vulnérable et devrait être protégée				
La gestion de l'eau devrait être basée sur une approche participative impliquant les utilisateurs, les planificateurs, les décideurs politiques et toutes les parties concernées.				
Les femmes jouent un rôle central dans l'approvisionnement, la gestion et la sauvegarde de l'eau				
L'eau a une valeur économique				

##### **Législation en rapport avec la GIRE**

1. Quels sont les principaux documents législatifs abordant les questions de l'eau dans votre pays ?  
 -----  
 -----
2. Quelles sont les institutions responsables d'initier les lois et mettre en place les normes et les régulations en matière de d'eau?

	Nom de l'institution responsable
Initier les lois	
Mettre en place les normes de l'eau	
Mettre en place les réglementations de l'eau	

3. Quelle est la pertinence de l'environnement favorable du cadre législatif pour les domaines suivants de la GIRE dans votre pays ?

	Pas du tout	Dans une certaine mesure	Dans une large mesure
Plans de réduction de la pauvreté			
Plan sur l'efficacité de l'eau			
Plans nationaux de développement et d'investissement			
Plans de gestion des ressources en eau régionales et sous-régionales			
Plans des ressources en eau transfrontalières			
Réformes			

#### Défis de mise en oeuvre

1. Décrivez les contraintes à la mise en oeuvre de la GIRE attribuables aux problèmes d'ordre politique -----  
-----
2. Décrivez les contraintes à la mise en oeuvre de la GIRE attribuables aux problèmes d'ordre institutionnel-----  
-----
3. Décrivez les contraintes à la mise en oeuvre de la GIRE attribuables aux problèmes d'ordre légal -----  
-----
4. Quels ont été les défis en rapport avec les buts suivants de la GIRE ? Veuillez fournir votre texte pour chaque but ci-dessous.

a. L'eau est en train d'être utilisée équitablement.

b. Il y a la durabilité environnementale dans la façon dont l'eau est en train d'être utilisée

c. L'eau est utilisée avec efficacité économique.

d. Toutes les catégories d'utilisateurs peuvent participer à la formulation de la politique et des objectifs dans le bassin.





pour l'approvisionnement en eau et l'assainissement						
Investissement public						
Investissement privé						
Recherche						
Décentralisation						

4. Quels sont les principaux éléments de la politique de gestion des ressources en eau par rapport à la GIRE ? Veuillez donner votre appréciation en complétant dans le tableau ci-après :

Programmes de Gestion de l'eau/Politiques/Stratégies/Mesures	Pas approprié	A l'étude	mais pas encore mis en oeuvre	partiellement mis en oeuvre	Entièrement mis en oeuvre
<b>Développement des ressources en eau</b>					
Evaluation des ressources en eau.					
Normes réglementaires et directives pour un développement durable des ressources en eau.					
Etudes à l'échelle du bassin pour le développement et la gestion à long terme des ressources en eau.					
Programme de collecte des eaux pluviales.					
Initiatives pour la collecte des eaux à partir des brouillards côtiers					
Programmes d'augmentation de l'approvisionnement pour satisfaire la demande croissante de l'eau.					
Programmes et politiques de recyclage de l'eau, traitement des eaux usées et réutilisation.					
<b>Gestion des ressources en eau</b>					
Programmes et politiques pour la gestion des bassins versants.					
Programmes pour améliorer l'efficacité des infrastructures d'eau afin de limiter les pertes d'eau					
Programmes et politiques de protection et réhabilitation des bassins versants.					
Programme de gestion des eaux souterraines.					
Programmes/politiques pour renverser la dégradation des écosystèmes et restaurer leurs fonctions.					
Programmes et politiques pour éviter les inondations et surmonter les désastres liés aux inondations.					
Programmes et politiques pour combattre la sécheresse et la désertification.					
Politiques pour une affectation efficiente des ressources en eau parmi les utilisations concurrentes.					
Mécanismes législatifs pour protéger les ressources en eau contre différents types de pollution.					
Mesures de gestion de la demande pour améliorer l'efficacité de l'utilisation de l'eau dans tous les secteurs.					
L'intégration des installations de drainage dans les plans de développement de l'agriculture irriguée					
Mécanismes pour promouvoir l'utilisation conjonctive des eaux souterraines et des eaux de surface.					
Normes et directives pour évaluer les impacts environnementaux					

des projets d'eau.					
Programmes de coopération pour une gestion conjointe des ressources en eau partagées.					
<b>Utilisation de l'eau</b>					
Enquête sur la demande en eau dans les différents secteurs utilisant l'eau.					
Programmes et politiques pour gérer l'utilisation de l'eau en agriculture.					
Programmes et politiques pour gérer l'utilisation de l'eau municipale					
Programmes et politiques pour gérer l'utilisation de l'eau dans les industries					
Programmes et politiques pour gérer les autres utilisations de l'eau.					
<b>Surveillance, Gestion et Diffusion de l'Information</b>					
Réseaux fonctionnels de surveillance hydrologique et hydrométéorologique					
Procédures standardisées pour la compilation, le traitement et l'analyse des données					
Un système fiable d'information sur la gestion intégrée des ressources en eau.					
Programmes d'échange et partage des connaissances en rapport avec les bonnes pratiques.					
Système de surveillance et rapportage pour déterminer l'impact des réformes de la GIRE					
<b>Renforcement des capacités et Environnement Favorable</b>					
Evaluation des besoins en renforcement des capacités/lacunes dans le secteur de l'eau					
Programmes de renforcement des capacités sur les différents aspects de la gestion des ressources en eau.					
Etablissement des institutions qui s'occupent de la gestion des bassins des rivières.					
Réformes institutionnelles pour renforcer l'efficacité /la responsabilité des institutions.					
Mécanismes de coordination institutionnelle pour la gestion des ressources en eau.					
Mécanismes pour lier la gestion de l'eau aux autres secteurs économiques.					
Evaluation des besoins et lacunes de la recherche sur la gestion de l'eau					
Mécanismes pour appliquer la législation sur l'eau.					
Programmes pour fournir des services de conseil (extension) sur la gestion de l'eau aux consommateurs.					
Programmes de transfert des technologies améliorées et rentables en matière d'économie de l'eau					
Les politiques et programmes en faveur des pauvres dans le secteur de l'eau.					
<b>Participation des partenaires</b>					
Processus de participation des partenaires dans la prise de décisions en rapport avec la gestion de l'eau.					
Structures d'une gestion décentralisée des ressources en eau.					
Programmes pour impliquer les groupes minoritaires dans tous les aspects de la gestion des ressources en eau.					
Programmes pour intégrer le genre dans tous les aspects de la					

gestion des ressources en eau					
Les campagnes de sensibilisation pour éduquer la population aux liens entre l'eau, la santé et pauvreté					
Mécanismes pour discuter/résoudre les questions transfrontalières avec les pays riverains.					
Partenariats pour la gestion des ressources en eau.					
<b>Financement</b>					
Investissement dans le secteur de l'eau					
Stratégie pour mobiliser les ressources financières dans le secteur de l'eau					
Normes et procédures pour la durabilité et la viabilité financières des projets d'eau.					
Mécanismes progressifs de recouvrement des coûts/structures tarifaires progressives dans tous les domaines d'utilisation de l'eau.					
Subsides/programme de micro crédits pour promouvoir les technologies de conservations de l'eau.					
Plan d'investissement dans le secteur de l'eau.					

5. Comment le gouvernement et votre institution ont-ils intégré les conventions internationales générales de la GIRE? "0= Non implantées, 1= Médiocre,..., 4= Entièrement implantées "

	0	1	2	3	4	Je ne sais pas
Les règles de Helsinki sur l'utilisation des eaux des rivières internationales, 1966						
Convention relative aux zones humides, 1971						
Déclaration de Stockholm, 1972						
Déclaration de Mar del Plata, 1977						
La Charte Mondiale pour la Nature, 1982						
La pollution des bateaux, 1978						
La loi de l'océan, 1982						
Contrôle des CFC, 1987						
Déclaration de Rio de Janeiro, 1992						
- Les principes de Dublin						
- Agenda 21						
- Changements climatiques						
- Biodiversité						
Désertification, 1994						
Convention sur les cours d'eau, 1997						
Le protocole de Kyoto, 1997						
Déclaration du Millénaire, 2000						
La déclaration de New Delhi sur les principes du Droit International en Rapport avec le Développement Durable, 2002						

6. Les politiques actuelles de l'eau sont-elles traduites en lois appropriées ?



	0	1	2	3	4	Je ne sais pas
Pollution						
Normes de qualité pour les différentes utilisations						
Garantie d'approvisionnement						
Niveau d'efficacité						
Conformité						
Audit						
Surveillance						
Résolution des conflits						
Tarif et fixation des prix de l'eau						
Mécanismes de protection des clients						
Les eaux transfrontalières						
Permis de décharge						

19. Est-ce que le cadre législatif a subi une réforme par rapport à la GIRE au cours de la dernière décennie ?

Oui \_\_\_\_\_

Non \_\_\_\_\_

20. Si oui, pouvez-vous esquisser quelques améliorations importantes

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### **Cadre organisationnel**

1. Quel est le cadre institutionnel pour la mise en oeuvre de la GIRE dans votre organisation? Si votre organisation est dans la phase de mise en oeuvre, veuillez indiquer l'organisation institutionnelle tel que par exemple : organe national de mise en oeuvre, mécanismes de coordination intersectorielle, fora des partenaires, comités du bassin de la rivière etc.

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2. Renforcement des capacités dans l'Institution par rapport à la GIRE.

Veuillez cochez ci après : 1. Pas approprié; 2. Sous étude;

3. En place mais pas encore mis en oeuvre; 4. En place et partiellement mis en oeuvre; 5. Entièrement mis en oeuvre.

	Questions de renforcement des capacités	1	2	3	4	5
2.1	Etablissement des Institutions de Gestion					
2.2	Réformes internationales pour renforcer l'efficacité/la responsabilité des institutions					
2.3	Mécanismes de coordination institutionnelle pour la GIRE					
2.4	Mécanismes pour lier la GIRE aux autres secteurs économiques					
2.5	Mécanismes pour appliquer la législation de l'eau					

2.6	Programmes pour fournir des services de conseil (extension) sur la gestion de l'eau aux consommateurs					
2.7	Programmes de transfert des technologies améliorées et rentables en matière d'économie de l'eau					
2.8	Les politiques et programmes en faveur des pauvres dans le secteur de l'eau.					

3. Comment jugez-vous les performances de votre institution par rapport à la GIRE ?

“0= Pas mis en oeuvre, 1= Médiocre, 2 = Assez bon, 3 = bon, 4= Excellent”

	0	1	2	3	4	Not Relevant
Renforcement des capacités pour exercer les fonctions						
Adéquation fiscale						
Adéquation du personnel						
Adéquation administrative						
Responsabilité et transparence						
Partage des connaissances et développement des ressources humaines						
Mécanismes de résolution des conflits						
Equité						
Performance individuelle						

4. Y'a-t-il des organisations décentralisées affiliées à votre institutions ? (Veuillez cocher)

	Cocher
Organisations dans le bassin de la rivière	
Organes suprêmes au niveau national	
ONGs	
Organisations communautaires	
Organisations de fermiers	
Associations d'utilisateurs de l'eau	

5. Ces organisations sont-elles suffisamment renforcées ?

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6. Y'a-t-il un mécanisme de partage des connaissances entre votre propre institution et les autres institutions au niveau national ?

- Oui
- Non

7. Si oui, lister ces institutions

.....

8. Y'a-t-il un mécanisme de partage des connaissances entre votre institution et les autres institutions à l'échelon international ?

- Oui
- Non

9. Si oui, lister ces institutions

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10. Quelle formation en rapport avec la GIRE avez-vous bénéficié dans votre institution?

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11. Dans quel domaine de la GIRE voulez-vous vous perfectionner ?

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12. Y'a-t-il une différence entre le cadre institutionnel durant les périodes coloniale et post-coloniale

- Oui
- Non

13. Si oui, pourriez-vous indiquer les domaines où il y a eu une amélioration?

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14. Avez-vous une Institution Nationale ou un centre spécialisé en éducation, formation et recherche en rapport avec la GIRE ?

- Oui
- Non

15. Si oui comment classez-vous ses performances? (Veuillez cochez)

**“0=Pas mis en oeuvre, 1= Médiocre,..., 4= Excellent”**

	0	1	2	3	4	Je ne sais pas
Curricula de GIRE						
Personnel						
Equipement						
Contribution aux politiques nationales de l'eau et à la sensibilisation						
Recherche et publication						
Organisation de séminaires en rapport avec la GIRE à l'intention du public						

16. Que pouvez-vous suggérer pour la mise en œuvre de la GIRE par rapport aux institutions de formation ?

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17. Y'a-t-il un conseil central (agence) responsable de la coordination des décisions et actions parmi les divers utilisateurs de l'eau (Municipalités, industries, fermiers, production hydroélectrique, navigation, tourisme, etc.) ?

Oui

Non

18. Si oui, Quelle est cette agence?

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19. Quelles sont ses principales responsabilités?

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20. Quelles sont les autres institutions qui travaillent sous le conseil central de l'eau ? Et quelles sont leurs responsabilités ? Autorités ? Le calibre de ses opérateurs ? Et à qui rendent-ils compte?

Nom	Responsabilités	Autorités	Calibre		A qui rendent-ils compte
			Décideur	Opérateur	
1		Non			
		Limité			





Veillez répondre sur l'état de financement des activités en rapport avec la GIRE en remplissant le tableau ci-après :

Veillez cochez ci après . (1. Pas approprié ; 2. A l'étude; 3. En place mais pas encore mis en œuvre ; 4. En place et partiellement mis en œuvre ; 5. Entièrement mis en oeuvre.)

	Questions de financement	1	2	3	4	5
1.1	Plan d'Investissement dans le secteur de l'eau					
1.2	Stratégies pour mobiliser les ressources financières dans le secteur de l'eau					
1.3	Normes et procédures pour la durabilité et la viabilité financières des plans de l'eau					
1.4	Mécanismes progressifs de recouvrement des coûts/structures tarifaires progressives dans tous les domaines d'utilisation de l'eau.					
1.5	Subsides/programmes de micro crédit pour promouvoir les technologies de conservation de l'eau					

29. Y'a-t-il une évolution vers la privatisation dans le secteur de l'eau?

Pas encore

Dans une certaine mesure sous forme

de..... et dans les secteurs

Fortement attendu dans les domaines

de..... et sous forme de

30. Quel est le rôle de la tarification de l'eau dans la stratégie complète de l'eau?

31. Est-il prévisible que des redevances seront appliquées sur l'utilisation de l'eau pour les besoins d'irrigation?

32. Combien coûte l'octroi d'un permis pour implanter un forage/puits?

33. Quelle est la fréquence de renouvellement de la licence d'exploitation des forage/puits ? Et sous quelles conditions?

34. Y a-t-il d'autres redevances pour l'utilisation de l'eau souterraine?

35. Que pourraient être les obstacles qui empêchent l'installation d'un système de mesure pour l'utilisation de l'eau souterraine ?

36. Quels genres de redevances sont appliquées à l'utilisation des eaux de surface pour l'irrigation ?  
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37. Quelle est la possibilité d'introduire ou augmenter les charges sur l'utilisation des eaux pour l'irrigation?  
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38. Quels sont les obstacles auxquels fait face l'introduction ou l'augmentation des redevances sur l'utilisation des eaux de surface pour l'irrigation ?  
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39. Serait-il facile d'appliquer des redevances sur l'eau d'irrigation selon le type de cultures?  
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40. Y'a-il une évolution vers le changement des pratiques culturales en vue de d'économiser l'eau?  
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41. Quels sont les instruments qui pourraient être utilisés pour mettre en oeuvre de tels changements?
- a) Instruments économiques (tarifs, subsides, taxes, dégrèvement fiscal, etc.):  
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- b) Législation:  
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42. Comment appliqueriez-vous des redevances sur la décharge des effluents industriels?  
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43. Ces redevances seraient-ils efficaces dans la protection des ressources en eau contre la pollution ?  
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44. De quelle manière le système de décharges des effluents pourrait-il être amélioré ?  
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45. Quelles incitations sont/ou pourraient être utilisées pour minimiser le gaspillage et économiser l'eau pour tous les usages ?
- a) Cas d'agriculture:  
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- b) Cas des ménages : cas des industries :  
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46. A quelle fréquence les tarifs d'eau, les subsides, taxes et autres redevances sont-ils revus? Et qui exprime le besoin de leur révision?

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47. Est-ce qu'une législation spéciale est nécessaire pour imposer ou changer de telles redevances sur l'eau ?

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48. Dans quelle mesure le principe de « celui qui pollue paye » est appliqué dans les cas de pollution de l'eau ?

a) Dans quels secteurs/sous-secteurs ?

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b) Quels sont les problèmes auxquels fait face la mise en oeuvre de ce principe ?

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49. Dans quelle mesure le secteur privé est-il impliqué dans l'approvisionnement/distribution des services d'eau

Pas du tout

Il est prévu qu'il sera impliqué.

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50. Qui finance l'approvisionnement en eau ? (Veuillez cochez)

- L'administration
- communauté?

51. Est-ce que l'investissement privé est permis dans le secteur de l'approvisionnement en eau ou de l'hydroélectricité ?

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52. Avez-vous autre chose à ajouter ? si oui veuillez en faire mention.-----