



Project acronym: **WATERBIOTECH**



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Deliverable D1.2

Specific targeted regions with a representative of each region

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1- INTRODUCTION

Based on the first deliverable D1.1 Regional Segmentation and Description of the Legal-Institutional and Socio-environmental characteristics, other factors are included in this report to give a more significant segmentation of the African continent.

For this two other man factors are considered in addition to climatic factor which are water availability and access to improved water resources, This will lead to a better understanding of the water situation and will include the quality and the access to water as criteria for segmentation.

This new classification will facilitate to us to identify the appropriate regional representative for groups of country which share almost the same characteristics (climatic, water availability and access to improved water resources).

2- SEGMENTATION BASED ON NEW SELECTED FACTORS

Based on the former deliverable 1.1 on regional segmentation and characteristics description, the task leader with the coordinator agreed on rethinking the key segmentation factor, and therefore it was agreed that not only climatic factors are to be considered, but water availability and accessibility are of relevance as well.

Indeed, it is not enough to have sufficient water resources (surface and groundwater), it is more important that these resources can be exploited. The climatic characteristics (arid/semi-arid and humid) are mainly indicators of water availability but some exceptions are still to be mentioned.

The African continent has several trans boundary water sources manly basins, rivers and groundwater. The disparities in water distribution among the continent are at the origin of the fact that some countries are to be classified as arid and semi-arid with limited water availability and humid with water availability. However, other countries besides being arid and semi-arid, they have considerable water availability.

Three of the great lakes of Africa lie on the borders of Tanzania and partially within it. Lake Tanganyika is located on the western border, Lake Victoria in the northwest, and Lake Malawi in the southwest.

The largest lake in Africa is Lake Victoria. It is bordered by the countries of Kenya, Tanzania, and Uganda. Lake Victoria is the second largest fresh water lake in the world-after Lake Superior. Lake Malawi (Lake Nyasa) and Tanganyika lie in the Great Rift Valley, a tremendous geological fault system extending from Middle East to Mozambique.

The longest river in Africa is the Nile being shared between Sudan Uganda, Ethiopia and Egypt, followed by the Congo flowing through Angola and the Congo, and then the Niger shared between Guinea Sera Leone, Niger, Nigeria and Cameroon.



Figure 1¹.

The transboundary aquifers in Africa are dominated by the sub-regional sedimentary systems of Sahara and Central and Southern Africa. The systems, from north to south, include the Libyan Sahara, the Sahel Basin with the Taoudenni, the Iullemeden and the Chad and the Congo, the Kalahari and the Karoo in Southern Africa. In addition to the sub-regional aquifers there are also a multitude of local transboundary systems shared by two or more adjacent countries.

Table1. Transboundary aquifers in arid and semi-arid Africa countries²

<i>Countries (Basin)</i>	<i>Area (10³ km²)</i>	<i>Storage (m³)</i>	<i>Recharge (mm³/yr)</i>	<i>Withdrawal (mm³/yr)</i>	<i>Observations</i>
Nubian Sandstone	2,000	–	–	–	Egypt, Libya, Sudan, Chad
Senegal- Mauritania	200	–	–	–	Gambia, Guinea-Bissau, Mauritania, Senegal
Lake Chad	1,400	–	–	–	Cameroon, Niger, Nigeria, Central African Rep., Chad
Algeria, Tunisia, (Northern Sahara)	350	6 × 10 ¹³	500 270	400 200	Max. fall in level: 29 m in 14 years
Libya (Kufrah)	1,800	6 × 10 ¹³	Appr 1,000	160	15–20 m in 4 years
Mali, Niger, Nigeria (Iullemeden)	500	4–8 × 10 ¹⁰	Not assessed	Not assessed	Max fall in level: 100 m
Mauritania, Senegal	200	1.5 × 10 ¹²			Fall in level over two-thirds of the area

¹ <http://exploringafrica.matrix.msu.edu/teachers/curriculum/m6/activity2.php>

² UNESCO, ISARM-AFRICA, Managing shared aquifer resources in Africa, 2004

Based on the information above and the former report on the regional segmentation of African countries, we consider classifying the regions based not only using climatic characteristic but also we include water availability and access to improved water resources, decisions were made based on the data and information collected from “ African water Atlas” and “FAO” reports.

The grouping for access to improved water resources was assigned as follow:

- Good access to improved water resources: 91- 100%
- Average access to improved water resources: 51- 90%
- Limited access to improved water resources: Less than 50 %

The table bellow summarizes the regions sharing the same chosen key factors:

Segmentation Based on Water Availability and Climate Characteristics						
Climate	Water Availability			Limited Water Availability		
	Good Access	Average Access	Limited Access	Good Access	Average Access	Limited Access
Humid		Burkina Faso, Senegal, Ghana, Congo, Gabon, Burundi, Central African Republic, Cameroon, Guinea, Guinea Bissau, Nigeria, Benin, South Sudan, Togo, Uganda, Cote d' Ivory, Tanzania, Liberia, Zambia, Malawi	DR. Congo, Angola, Mozambique, Sierra Leone			
Arid /Semi Arid	Botswana	Kenya, Zimbabwe	Ethiopia	Egypt, Tunisia, South Africa, Djibouti, Namibia	Algeria, Morocco, Mali, Eritrea, Sudan, Swaziland	Mauritania, Niger, Chad, Libya, Somali

3- REGIONAL REPRESENTATIVES

The regional representatives are nominated as follows:

WSA from Burkina Faso is proposed to represent all humid countries,

IWMI from Ethiopia is proposed to represent arid and Semi-Arid with water availability regions,

CDER from Algeria is proposed to represent arid and semi-arid with limited water availability regions.