

1 **Table 1** : Hydro-climatic characteristics by drainage system

		Geographical coordinates			basin area km ²		Hydro-climatic characteristics					
		latitude	longitude E	Altitude m	station	Outlet	Ratio st./ex.	% CRB at BZV/KIN	Rainfall mm	Interannual average discharge m ³ .s ⁻¹	Specific discharge l.s ⁻¹ .km ⁻²	Seasonal variation flow
Lualaba	Kisangani	00° 30' 11" N	25° 11' 30"	373	974 138	974 138	1.00	27	1 307	7 640 ¹	7.8	1.9
Kasaï	Kutu-Moke	03° 11' 50" S	17° 20' 45"	303	750 032	897 545	0.84	20	1 456	8 070 ²	10.7	1.9
Sangha	Ouessou	01° 37' 00" N	016° 03' 00"	326	159 480	213 670	0.75	4	1 625	1 550 ³	9.7	2.3
Oubangui	Bangui	04° 22' 00" N	018° 35' 00"	345	494 088	650 482	0.76	14	1 499	3 660 ⁴	7.4	2.9
Cuvette Forest				350	1 239 589	1 239 589	1.00	34	1 700	18 250	14.7	-
Cuvette Flooded	-	-	-	300	1 000 - 160 000	360 000	-	-	1 700	25 - 1 600	10 - 15	2.5 - 5.5
Plateaux Batékés	-	-	-	350	42 570	90 000	0.47	1	1 900	1 330	29	1.1 - 1.5
Congo	Brazzaville /Kinshasa	04° 16' 21,5" S	15° 17' 37,2"	314	3 659 897	3 730 741	0.98	-	1 447	40 500 ⁵	11.1	1.7

2 The interannual modules are calculated at the different periods studied : ¹: 1951 à 2012 ; ²: 1940 à 2012 ; ³: 1948 à 2018 ; ⁴: 1936 à 2018 ; et ⁵: 1903 à 2018

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4 Legend : st. = (hydrometric station), ex. = outlet. The hydro-climatic characteristics of the Central Basin and the Batekés Plateaux are derived from the
5 work of Laraque et al., 1998 and 2009)

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7 **Table 2** : Hydro-climatic characteristics by drainage system for common rainfall and flow periods

Drainage system (basin)	Main Station	Period	Mean $m^3.s^{-1}$	Areal rainfall $mm.an^{-1}$	Depth of runoff $mm.an^{-1}$	Runoff deficit
Lualaba	Kisangani	1951-1999	7 742	1 308	251.1	1 056.9
Kasaï	Kutu-Moke	1948-1999	8 246	1 445	347.4	1 097.6
Sangha	Ouessou	1948-1999	1 596	1 638	316.2	1 321.8
Oubangui	Bangui	1940-1999	3 809	1 499	243.6	1 255.4
Congo	Brazzaville/Kinshasa	1940-1999	41 301	1 447	356.6	1 090.4

8 **Note** : The available **rainfall** cover the period 1940 to 1999

9 **Table 3: Available Data:** Monthly rainfall (R) and Daily Flow (Q)

River	Station	R (mm)			Q (m ³ .s ⁻¹)		
		Periods	Years	Gaps	Periods	Years	Gaps
Lualaba	Kisangani	1940-1999	60	-	1951-2012	62	
	Kasaï	1940-1999	60	-	1948-2012	65	
	Sangha	1940-1999	60	-	1948-2018	71	1952, 1997 et 1998
Oubangui	Bangui	1940-1999	60	-	1936-2018	83	
Congo	Brazzaville/Kinshasa	1940-1999	60	-	1903-2018	116	

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Table 4 : Synthesis of statistical results on multi-year rainfall (R) and discharge (Q) **time series**

	Station			Correlation on the rank			Pettitt test				Segmentation							
	River at Station	beginning obs.	end obs.	99%	95%	90%	99%	95%	90%	date	date seg1	Avera. Seg1	date seg2	Avera. Seg2	date seg3	Avera. Seg3	date seg4	Avera. Seg4
Annual Rainfall (mm)	Lualaba at Kisangani	1940	1999	R	R	NR	NB	B	B	1982	1940; 1982	1337	1983; 1999	1231				
	Kasai at Kutu Moke	1940	1999	NR	NR	NR	B	B	B	1969	1940; 1969	1525	1970; 1999	1388				
	Sangha at Ouesso	1940	1999	R	R	R	NB	NB	NB		1940; 1999	1625						
	Oubangui at Bangui	1940	1999	NR	NR	NR	B	B	B	1969	1940; 1970	1545	1971; 1999	1449				
	Congo at BZV/KIN	1940	1999	NR	NR	NR	B	B	B	1970	1940; 1970	1494	1971; 1999	1396				
	Lualaba at Kisangani	1950	1999	NR	NR	NR	NB	B	B	1982	1950; 1982	1348	1983; 1999	1231				
Average Annual Discharge (m ³ .s ⁻¹)	Kasai at Kutu Moke	1950	1999	NR	NR	NR	B	B	B	1969	1950; 1969	1541	1970; 1999	1388				
	Sangha at Ouesso	1950	1999	R	R	NR	NB	NB	B	1971	1950; 1999	1638						
	Oubangui at Bangui	1950	1999	NR	NR	NR	B	B	B	1970	1950; 1969	1562	1970; 1999	1451				
	Congo at BZV/KIN	1950	1999	NR	NR	NR	B	B	B	1970	1950; 1970	1513	1971; 1999	1396				
	Lualaba at Kisangani	1951	2012	R	R	R	NB	NB	NB		1951; 1959	6626	1960; 2012	7814				
	Kasai at Kutu Moke	1948	2012	NR	NR	NR	B	B	B	1979	1948; 1991	8606	1992; 2012	6943				
Average Annual Discharge (m ³ .s ⁻¹)	Sangha at Ouesso	1948	2018	NR	NR	NR	B	B	B	1971	1948; 1970	1800	1971; 2018	1429				
	Oubangui/Bangui	1936	2018	NR	NR	NR	B	B	B	1981	1936; 1959	4220	1960; 1970	4886	1971; 1981	3615	1982; 2018	2919
	Congo at BZV/KIN	1903	2018	R	R	R	NB	NB	NB		1903; 1959	39691	1960; 1970	48022	1971; 2018	39755		
	Oubangui at Bangui	1948	2018	NR	NR	NR	B	B	B	1981	1948; 1959	4119	1960; 1970	4886	1971; 1981	3515	1982; 2018	2919
	Congo at BZV/KIN	1948	2018	R	NR	NR	B	B	B	1981	1948; 1959	40132	1960; 1970	48022	1971; 2018	39755		
	Lualaba at Kisangani	1951	1999	R	R	R	NB	NB	B	1959	1951; 1960	6745	1961; 1964	9762	1965; 1999	7797		
Average Annual Discharge (m ³ .s ⁻¹)	Kasai at Kutu Moke	1950	1999	NR	NR	NR	B	B	B	1979	1950; 1991	8597	1992; 1999	6266				
	Sangha at Ouesso	1950	1999	NR	NR	NR	B	B	B	1971	1950; 1970	1808	1971; 1999	1430				
	Oubangui at Bangui	1950	1999	NR	NR	NR	B	B	B	1970	1950; 1959	4068	1960; 1970	4886	1971; 1981	3615	1982; 1999	2877
	Congo at BZV/KIN	1950	1999	R	NR	NR	B	B	B	1980	1950; 1959	39776	1960; 1970	48022	1971; 1999	39556		

Legend : R : Random ; NR : no Random; B : Break; NB : no Break

14 **Annexe 1 – Table of Modules (in m³s⁻¹) available at the 5 hydrological stations studied**

River Year\Station	Lualaba Kisangani	Kasai Kutu Muke	Sangha Ouesso	Oubangui Bangui	Congo BZV/KIN
1903					38670
1904					40680
1905					34710
1906					38820
1907					34190
1908					38950
1909					45330
1910					41920
1911					38220
1912					40240
1913					36380
1914					35860
1915					34090
1916					38500
1917					42200
1918					34850
1919					33650
1920					37880
1921					40940
1922					37980
1923					41080
1924					42620
1925					41330
1926					43920
1927					37710
1928					41120
1929					39280
1930					40130
1931					37480
1932					40700
1933					40950
1934					40700
1935				5178	43560
1936				4958	41650
1937				4227	42120
1938				4625	40060
1939				4206	41260
1940				4089	42110
1941				4886	40320
1942				4655	42150
1943				3638	35920
1944				3665	39360

1945				4062	38890
1946				4438	38820
1947			1413	4412	43470
1948		8716		4753	44210
1949		8870		4001	39610
1950		8619		4355	42140
1951	6868	8640	1606	3380	
1952	7469	8046	1911	3853	40360
1953	6127	7837	1620	3486	37100
1954	5873	8735	1704	3957	37870
1955	6416	8717	1894	4652	44130
1956	7429	8882	1768	4310	42420
1957	7948	9060	2147	4234	42300
1958	5665	7552	1511	4350	35330
1959	5844	7638	1800	4119	36500
1960	7821	8764	1998	4698	46450
1961	8767	9543	1697	5488	47410
1962	10970	10360	2014	5657	55240
1963	10440	9173	2138	5168	51230
1964	8888	9167	1792	5024	48510
1965	7887	8417	1715	3967	43100
1966	8108	9466	2115	4723	48380
1967	7369	8832	1718	4039	41770
1968	8162	10050	1784	4378	46960
1969	9431	9986	2059	6134	51830
1970	8722	9232	1858	4565	47290
1971	8278	8880	1578	2959	40040
1972	7595	8236	1271	3297	38470
1973	7120	7796	1357	2821	37290
1974	7422	7878	1793	3834	39560
1975	7092	8383	1549	3981	41340
1976	7795	9194	1458	3889	42710
1977	9119	9731	1359	3552	45760
1978	9421	8385	1396	3769	43550
1979	8486	9153	1490	3388	45180
1980	7861	7213	1582	3991	41150
1981	8379	7427	1360	3953	40710
1982	7227	7897	1670	3228	38930
1983	7805	8084	1103	2466	35560
1984	6325	6879	1256	2352	33310
1985	7332	7463	1669	2962	38810
1986	7232	7804	1325	2492	36740
1987	8726	8694	1257	2490	38700
1988	7836	8953	1347	3117	39110
1989	7849	9988	1460	2437	37830
1990	7244	8717	1402	2115	35970
1991	7577	8136	1583	3016	40880

1992	6625	6089	1122	2914	34640
1993	6636	6705	1392	2800	36790
1994	7195	5810	1499	3268	38730
1995	8426	5960	1306	2720	39970
1996	7710	7000	1112	3711	40860
1997	6827	7659		2576	38370
1998	9089	5480		3410	45000
1999	7069	5463	1499	3751	41230
2000	6900	6496	1818	2429	40120
2001	8341	7125	1502	3155	42960
2002	7506	8552	1605	3020	43070
2003	7460	8837	1588	3374	43120
2004	6337	6235	1292	2889	38150
2005	6275	6917	1204	2908	37640
2006	6489	8236	1357	2892	38090
2007	8157	10110	1238	2872	42160
2008	7142	7976	1423	3168	41590
2009	7356	6764	1638	2712	41160
2010	8237	5614	1247	3211	42010
2011	6992	6093	1163	2300	35480
2012	7242	6800	948.9	3597	37070
2013			1280	3044	39660
2014			1611	3874	42080
2015			1461	2712	37860
2016			1618	2671	41360
2017			1601	2845	37260
2018			1500	2562	40130