



COMITE SCIENTIFIQUE FRANCAIS DE LA DESERTIFICATION

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NATIONAL INDICATORS FROM LITTERATURE

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Items: I: Institutional & Governancy; LCU: Land Cover & Land Use; SE: Socio-economics; VF: vegetation & Faune; WS: Water & Soil

Scales: G = Global; R = Regional; N = National; L = Local

The different types of indicator according to UNCCD

T1 = Type 1: Global indicators for assessment of the implementation of strategic objectives

Strategic objective 1: to improve the living conditions of affected populations

S1: decrease in numbers of people impacted by desertification/land degradation and droughts

S2: increase in numbers of people living above poverty line

S3: decrease in numbers of people below the minimum level of dietary energy consumption in affected areas

Strategic objective 2: to improve the condition of affected ecosystems

S4: decrease in affected areas

S5: increase in net primary productivity

Strategic objective 3: to generate global benefits through UNCCD

S6: increase in carbon stocks in affected areas

S7: areas of forest, agricultural and aquaculture under sustainable management

Strategic objective 4: to increase available funds for combating desertification and drought adaptation

S8: increase in available funds

S9: development of policies addressing desertification

T4 = Type 4: Indicators for decision-makers, enabling the assessment of trends, success and failures at different scales

N°	Type UNC CD	Item	Indicators and units	Methodology	Primary data availability	Scales	Feasi bility	Cos t	Reference	Comments
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N°	Type UNC CD	Item	Indicators and units	Methodology	Primary data availability	Scales	Feasibility	Cost	Reference	Comments
1	S1	SE	Total number of people killed & affected by natural disasters (number)		OFDA/CRED: EM-DAT ; Munich Re: Annual review of nat. dis. ; UN-OCHA: ReliefWeb ; UN-ISDR	L / N			UNEP (2005) GEOdata WG	
2	S1 S2 S4 S7	SE	Production through certified channels (tons)		Certification bodies	G/N/R			CSFD WG (2008)	Production by culture and by sector: organic, bio-fair, fair trade (cotton coffee, shea-tree...)
3	S1 S2 S4 S7	SE	Association of organic agriculture or/and fair trade farmers (number)			G/R/N			CSFD WG (2008)	
4	S1; S2	SE	Population with water stress (number, %)		FAO: AquaStat WRI: World Resources Database ; UNESCO: World Water Resources ; UNH/GRDC: Runoff Fields ; Univ. of Kassel: WaterGap ; IGRAC (Int Groundwater Resources Ass. Centre) GGIS	G / R / N			UNEP (2005) GEOdata WG	
5	S1; S2	SE	Economic loss due to natural disasters (million US\$)		OFDA/CRED: EM-DAT ; Munich Re: Annual review of nat. dis. ; UN-OCHA: ReliefWeb ; UN-ISDR	G / R / N / L			UNEP (2005) GEOdata WG	

N°	Type UNCD	Item	Indicators and units	Methodology	Primary data availability	Scales	Feasibility	Cost	Reference	Comments
6	S1; S2	SE	% of total population access to safe drinking water (%) - Urban and rural zones		National statistics; UNPD: World Population Prospects ; WHO: WHOSIS, World Health Report	R / N / L			UNEP (2005) GEOdata WG ; Groupe des Nations Unies pour le Développement (2005).	Well being indicator
7	S1; S2	SE	% of total population access to sanitation services(%) - Urban and rural zones		National statistics; UNPD: World Population Prospects ; WHO: WHOSIS, World Health Report	G / R / N / L			UNEP (2005) GEOdata WG ; Groupe des Nations Unies pour le Développement (2005) ; CSLP, 2003 et 2004 In: Anonyme (n.d.) Etude Sahel	Well being indicator
8	S1; S2; S3	SE	Water availability (per capita) (m3/cap)	CIESIN to deliver	CIESIN to deliver	R / N / L			Anonyme 2008 GEF	
9	S1; S3; S7; T4	SE	Annual productions of the main crops (Mt)		agro-MAPS (FAO) ; FAOSTAT	R / N / L			www.fao.org/landwater/agll/agromaps/interactive/page.jsp ; faostat.fao.org/	Including cereals and cotton
10	S1; S4	SE	Annual internal renewable water resources per cap (m3/cap)		FAO: AquaStat WRI: World Resources Database ; UNESCO: World Water Resources ; UNH/GRDC: Runoff Fields ; Univ. of Kassel: WaterGap ; IGRAC (Int	R / N			UNEP (2005) GEOdata WG	

N°	Type UNC CD	Item	Indicators and units	Methodology	Primary data availability	Scales	Feasibility	Cost	Reference	Comments
11	S2	SE	Rural poverty: - Income per capita distribution (US\$/cap)	World Bank	National statistics; World Development Report	R / N / L			Anonyme 2008 GEF	
12	S2	SE	Value added as % of GDP by sector (%)		World Bank: World Development Indicators	R / N			UNEP (2005) GEOdata WG	
13	S2; T4	SE	Rural Poverty: Fraction of population below \$1 (or 2\$) /day (number, %); in dryland areas (number,%)	World bank	World Development Report ; UNEP/FAO/ISRIC: GLASOD	R / N / L			Anonyme 2008 GEF ; UNEP (2005) GEOdata WG	See also IFAD
14	S2; T4	SE	Effective poverty at 1 (or 2 \$) (Purchasing power) (%)	National surveys	GEODATABASE	N / L			http://geodata.grid.unep.ch/	
15	S2; T4	SE	Fraction of population below national poverty line (%)		UNDP	R / N			Groupe des Nations Unies pour le Développement (2005).	Prerequisite: countries must have defined this threshold
16	S2; T4	SE	poverty gap ratio (Incidence of the poverty multiplied by the degree of poverty)		UNDP	R / N			Groupe des Nations Unies pour le Développement (2005).	
17	S2; T4	SE	Share of poorest quintile in national consumption (%)		UNDP	R / N			Groupe des Nations Unies pour le Développement (2005).	
18	S2; T4	SE	Incidence of poverty on life conditions (mass poverty) (%)			R / N / L			CSLP, 2003 & 2004 In: Anonyme (n.d.) Etude Sahel	

N°	Type UNC CD	Item	Indicators and units	Methodology	Primary data availability	Scales	Feasibility	Cost	Reference	Comments
19	S2; T4	SE	GINI Indice (income and consumption inequality, %)		FAO stat	R / N			CSLP, 2003 & 2004 In: Anonyme (n.d.) Etude Sahel	
20	S3	SE	Caloric intake per cap (cal/day/pp)		UNPD: World Population Prospects ; WHO: WHOSIS, World Health Report, Global Burden of Disease ; UNICEF: Childinfo.org ; WHO/UNICEF Joint Monitoring Program (JMP); FAO	R / N			UNEP (2005) GEOdata WG; FAO	
21	S3; T4	SE	Prevalence of children of less than 5 years having weight insufficiency (%)		UNDP	R / N			Groupe des Nations Unies pour le Développement (2005); FAO	
22	S3; T4	SE	Fraction of the population below the minimum caloric intake (%)		UNDP	R / N			Groupe des Nations Unies pour le Développement (2005); FAO	
23	S4	LCU	Urban sprawl (ha/year)	Satellite images ; topographical, soil and geological maps	Landsat TM...	N / L				
24	S4	WS	Available surface water quantity (Mm3)			N / L			Wani et al., 2005 In: Anonyme (n.d.) Etude Sahel	
25	S4	WS	Edaphic indicator of soil surface change by wind action	Measure of sediment budget		G / R / N / L			CSFD WG (2008)	

N°	Type UNC CD	Item	Indicators and units	Methodology	Primary data availability	Scales	Feasibility	Cost	Reference	Comments
26	S4 ; S7	VF	Location and surface of forest fire (ha)	Daily NDVI or other (CSE ?) - MODIS-UMD	Cirad (projet LEAD) (PPZS, CSE)	N / L			Ickowicz et al. 2005,	
27	S4 ; S7	VF	Occurrence of forest fire during a 10 years period (number)	Sum of decadal NDVI or other (CSE ?)	Cirad (projet LEAD) (PPZS, CSE)	N / L			Ickowicz et al. 2005,	
28	S4; S5	LCU	Area of forest and woodland (total, per cap, %)		FAO: FAOSTAT, FRA/SOFO, UNDP	G / R / N			UNEP (2005) GEOdata WG ; Groupe des Nations Unies pour le Développement (2005)	
29	S4; S5	VF	Biodiversity integrity index			N / L			CSFD WG 2008	
30	S4; S5; T4	LCU; VF	Global vegetation Index	Remote sensing	GEODATABASE	G / R / N			http://geodata.grid.unep.ch/	
31	S4; S7	SE	Productivity/agricultural worker		World Bank	N / L			Anonyme (n.d.) Etude Sahel	
32	S4; S7	SE	Productivity/ha		World Bank	N / L			Anonyme (n.d.) Etude Sahel	
33	S4; S7	SE	Intensity of forest use (harvest / growth; % p/y)		FAO: FAOSTAT, FRA/SOFO	G / R / N / L			UNEP (2005) GEOdata WG	
34	S4; S7	VF	Genetic variability of cultivated plants			N / L			Wani et al., 2005 In: Anonyme (n.d.) Etude Sahel	
35	S4; S7; T4	LCU	Land cover (%)	Remote sensing	Specialised national agencies	G / R / N			Anonyme (2008). GEF	Other methods at local scale

N°	Type UNCD	Item	Indicators and units	Methodology	Primary data availability	Scales	Feasibility	Cost	Reference	Comments
36	S4; S7; T4	LCU	Ecological footprint (EF) (ha/person)	5 types: EF farmed lands; EF pastured lands; EF Fishery Zone; EF Energy, EF Forest	GEODATABASE	R / N / L			http://geodata.grid.unep.ch/ ; CSFD WG, 2008; WWF	cf William Rees 1992, 2000 : Ecological Economics vol 32; Gadrey et Jany-Catrice 2005
37	S4; S7; T4	SE	Land productivity (t/ha/year)	GLADA Remote sensing (NPP, NDVI corrected by RUE)	FAO/ISRIC	G / R / N / L			Anonyme 2008 GEF	
38	S4; S7; T4	SE	Man induced soil degradation (GLASOD)		GEODATABASE	G / R / N			http://geodata.grid.unep.ch/	Interesting but has to be updated
39	S4; S7; T4	WS	Total area affected by salinization (ha, % p/y)		UNEP/FAO/ISRIC: GLASOD & aquastat	R / N / L			UNEP (2005) GEOdata WG ; Wani et al., 2005 In: Anonyme (n.d.) Etude Sahel	
40	S4; T4	LCU	Annual average change in forest area (ha/year)		FAO: FAOSTAT, FRA/SOFO	G / R / N			UNEP (2005) GEOdata WG	
41	S4; T4	LCU	Change in arable land area (ha)		IUCN/WCMC: Protected Areas Database ; USGS/EDC: Olson World Ecosys. ; WWF: Ecoregions ; FAO: FAOSTAT	G / R / N			UNEP (2005) GEOdata WG	
42	S4; T4	LCU	Land use _ Changes of permanent pasture (ha, %)	National statistics		N / L			Carrière & Toutain (1995)	Detail nomenclatures and clarify rainfed cultures, irrigated cultures...

N°	Type UNC CD	Item	Indicators and units	Methodology	Primary data availability	Scales	Feasibility	Cost	Reference	Comments
43	S4; T4	LCU	Land use _ Total, arable, permanent agriculture, tilled areas (ha, %)	National statistics	aquastat (FAO)	G / R / N / L			http://www.fao.org/nr/water/aquastat/main/indexfra.stm	Detail nomenclatures and clarify rainfed cultures, irrigated cultures...
44	S4; T4	WS	Average annual soil erosion rate (t/ha)	Field measure : distinction between water and wind erosion	UNEP/FAO/ISRIC: GLASOD	R / N / L			UNEP (2005) GEOdata WG	
45	S7	SE	Exports of forestry products (% p/y)		FAO: FAOSTAT, FRA/SOFO	G / R / N			UNEP (2005) GEOdata WG	
46	S7	SE	Use of synthetic fertilizers and pesticides on agricultural lands (t/ha) (Nitrogen, Phosphate)		FAO: FAOSTAT ; IFA: Fertilizers & their use	R / N / L			UNEP (2005) GEOdata WG	
47	S7	SE	Firewood consumption (autoconsumption and marketed in cities) (m3)			R / N / L			CSLP, 2003 & 2004 In: Anonyme (n.d.) Etude Sahel	
48	S7	SE	Herd mobility, transhumance			N / L			Carrière & Toutain (1995)	Qualitative indicator
49	S7	SE	Part of breeding income in farm income (%)			N / L			Carrière & Toutain (1995)	
50	S7	SE	Other incomes from natural resources exploitation (\$)			N / L			Carrière & Toutain (1995)	
51	S7	SE	Breeding products price at national or regional scale (\$)			N / L			Carrière & Toutain (1995)	

N°	Type UNCD	Item	Indicators and units	Methodology	Primary data availability	Scales	Feasibility	Cost	Reference	Comments
52	S7	SE	Emissivity indicator (herder, animals) (number transhumants zone/total number of transhumants)	Transhumance surveys: herd composition, transhumance steps, departure date, arrival reason, effective departure, effective arrival, effective return)		N			Ickowicz et al. 2005,	
53	S7	SE	Transhumance indicator (herders, animals): nb transhumants per zone /total nb herders per zone	Transhumance surveys: herd composition, transhumance steps, departure date, arrival reason, effective departure, effective arrival, effective return)		N			Ickowicz et al. 2005,	
54	S7	SE	Potential zones for on going transhumance (ha) (pastures, Zones)	Biomass/parameters General theory of movement		N / L			Ickowicz et al. 2005,	
55	S7; S9	I	Herder associations (number)	Counting	National statistics	N / L			Carrière & Toutain (1995)	Associations of very different size exist
56	S7; S9	I	Farmer associations (number)	Counting	National statistics	N / L			CSFD WG, 2008	Associations of very different size exist
57	S7; S9	I	Control and incentive measures for animal production			N / L			Carrière & Toutain (1995)	Qualitative indicator

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58	S7; S9	I	Institutional network for natural resources management: Nb of organization by households (village committees...); average number of organizations undirectly involved in the natural ressources management (tontines...); % of membership of every organization weighted by the nb of village organizations	Surveys		L / N			Cirad 2003.	
59	S7; S9	I	Activities of natural resources management: average nb of days of households participation in activities; participation rate in the collective works; total number of organized activities (Water and soil conservation...)	Surveys		L / N			Cirad 2003.	
60	S7; T4	I	Certified forests by FSC (ha)		GEODATABASE	G / R / N			http://geodata.grid.unep.ch/	
61	S7; T4	SE	Increase of SLM area (ha)			R / N / L			Terrafrica & FAO (2008)	
62	S7; T4	SE	% farmers (land user) adopting SLM technologies			N / L			Terrafrica & FAO (2008)	
63	S7; T4	SE	Number of farmers affected by extension service (SLM)			N / L			Terrafrica & FAO (2008)	
64	S7; T4	SE	Number of farmers benefiting SLM support			N / L			Terrafrica & FAO (2008)	
65	S7; T4	SE	Number of farmers/land users having SLM equipment			N / L			Terrafrica & FAO (2008)	

N°	Type UNC CD	Item	Indicators and units	Methodology	Primary data availability	Scales	Feasibility	Cost	Reference	Comments
66	S7; T4	SE	Number of farmer payed for environnemental services SLM			N / L			Terrafrica & FAO (2008)	
67	S7; T4	SE; I	Acces right to pastoral ressources			N / L			Carrière & Toutain (1995)	Qualitative indicator
68	S7; T4	SE; LCU	Cultivated area / range area Proportion (%)			N / L			Carrière & Toutain (1995)	
69	S7; T4	VF	Endemic species number			R / N / L			Réquier-Desjardins & Bied-Charreton, 2002	
70	S7; T4	VF	Abundance of selected key species (number)		UN Indicators of sustainable development / UNEP-WCMC / IUCN	N			http://www.un.org/esa/sustdev/natlinfo/indicators/factsheet.pdf	
71	S7; T4	VF	Abundance of invasive alien species (number)		UN Indicators of sustainable development / UNEP-WCMC	N			http://www.un.org/esa/sustdev/natlinfo/indicators/factsheet.pdf	
72	S7; T4	VF; LCU	Fraction of monospecific forest / mixed forests (%)			N / L			Réquier-Desjardins & Bied-Charreton, 2002	
73	S8; S9	I	Policy, legal and regulatory framework (incl. financing and incentives)	Scorecard or Tracking Tool	To be determined	G / R / N / L			Anonyme 2008 GEF	Qualitative indicator
74	S8; S9	I	% of development programme funding used by civil society			G / R / N / L			CSLP, 2003 et 2004 In: Anonyme (n.d.) Etude Sahel	Qualitative indicator
75	S8; S9	SE	Road and accessibility indicators: lenght of primary and secondary roads per agroecological zones (km)		Maps of roads (primary and secondary (ADS, DAPS, CSE, DTC)	N / L			Ickowicz et al. 2005,	

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76	S9	I	Funds dedicated to scientific research on land degradation and management (\$)		National statistics	N			CSFD WG, 2008	cf H�el�ene Rey Valette (UM)
77	S9	SE	Price of cereals (rice and millet)/season/kg (\$)	Market surveys		N / L			Ickowicz et al. 2005,	
78	S9	SE	Price of animal in central markets/season/type (\$)	Report from breeding officer; surveys		N / L			Ickowicz et al. 2005,	
79	S9	SE	Trends in exchange terms (cereals/cattle) / baseline period (%)	Surveys on cereals and cattle sales		N / L			Ickowicz et al. 2005,	
80	S9	SE	Natural capital indicator _ to be defined			N			CSFD WG, 2008	cf. Scholes and Biggs, Nature 2005