Annex

Table 1.Extent of desertification/land degradation in irrigated areas within the drylands of the world, by continents, in thousand hectares

Continent	Total irrigated land	Desertified					
		Slight to none	Moderate	Severe	Very severe	Total moderate +	Percent desertified
Africa	10,424	8,522	1,779	122	1	1,902	18
Asia	92,021	60,208	24,335	5,788	1,690	31,813	35
Australia	1,870	1,620	100	130	20	250	13
Europe	11,898	9,993	1,340	460	105	1,905	16
N.America	20,867	15,007	4,930	730	200	5,860	28
S.America	8,415	6,998	1,047	310	60	1,417	17
TOTAL	**145,495**	**102,348**	**33,631**	**7,540**	**2,076**	**43,147**	**30**

Source : H. Dregne, ICASALS, 1991

Table 2.Extent of desertification/land degradation in rainfed cropland areas within the drylands of the world, by continents, in thousand hectares

Continent	Total rainfed cropland	Desertified					
		Slight to none	Moderate	Severe	Very severe	Total moderate +	Percent desertified
Africa	79,822	30,959	43,187	5,153	523	48,863	61
Asia	218,174	95,890	100,638	18,578	3,068	122,284	56
Australia	42,120	27,800	13,900	400	20	14,320	34
Europe	22,106	10,252	8,538	3,227	89	11,854	54
N.America	74,169	62,558	10,770	721	120	11,611	16
S.America	21,346	14,711	5,950	561	124	6,635	31
TOTAL	**457,737**	**242,170**	**182,983**	**28,640**	**3,944**	**215,567**	**47**

Source : H. Dregne, ICASALS, 1991

Table 3.Extent of desertification/land degradation in rangelands of the world, by continents,in thousand hectares

Continent	Total rangeland	Desertified					
		Slight to none	Moderate	Severe	Very severe	Total moderate +	Percent desertified
Africa	1,342,345	347,265	273,615	716,210	5,255	995,080	74
Asia	1,571,240	383,630	485,221	691,602	10,787	1,187,610	76
Australia	657,223	295,873	277,040	55,310	29,000	361,350	55
Europe	111,570	31,053	27,372	51,937	1,208	80,517	72
N. America	483,141	71,987	116,102	284,858	10,194	411,154	85
S. America	390,901	93,147	88,007	184,431	15,316	297,754	76
TOTAL	**4,556,420**	**1,222,955**	**1,267,357**	**1,984,348**	**71,760**	**3,333,465**	**73**

Source : H. Dregne, ICASALS, 1991

Table 4.Global status of desertification/land degradation in drylands of the world, by continents

Continent	Irrigated lands			Rainfed croplands			Rangelands			Total agricultural used drylands		
	Total m.hs	Degraded		Total m.hs	Degraded		Total m.hs	Degraded		Total m.hs	Degraded	
		m.hs	%		m.hs	%		m.hs	%		m.hs	%
Africa	10.42	1.90	18	79.82	48.86	61	1342.35	995.08	74	1432.59	1045.84	73.0
Asia	92.02	31.81	35	218.17	122.28	56	1571.24	1187.61	76	1881.43	1311.70	69.7
Australia	1.87	0.25	13	42.12	14.32	34	657.22	361.35	55	701.21	375.92	53.6
Europe	11.90	1.91	16	22.11	11.85	54	111.57	80.52	72	145.58	94.28	64.8
N.America	20.87	5.86	28	74.17	11.61	16	483.14	411.15	85	578.18	428.62	74.1
S.America	8.42	1.42	17	21.35	6.64	31	390.90	297.75	76	420.67	305.81	72.7
TOTAL	**145.50**	**43.15**	**30**	**457.74**	**215.56**	**47**	**4,556.42**	**3,333.46**	**73**	**5,159.66**	**3,562.17**	**69.0**

Source : H. Dregne, ICASALS, 1991

Table 5.Extent of soil degradation, by degrees, in world drylands

Degree	Dry sub-humid		Semi-arid		Arid		Hyper-arid		Total	
	million hectares	%	million hectares	%	million hectares	%	million hectares	%	million hectares	%
None	1071.2	82.7	1886.0	81.8	1176.8	75.0	876.4	89.6	5010.4	81.7
Slight	66.5	29.8	152.5	6.6	208.3	13.3	60.8	6.2	488.6	7.9
Moderate	129.0	10.0	200.2	8.7	141.1	9.0	39.0	4.0	509.3	8.2
Strong	25.8	2.0	63.2	2.7	41.1	2.6	1.8	0.2	131.9	2.1
Extreme	2.2	0.2	3.5	0.2	1.7	0.1	0.1	0.0	7.5	0.1
TOTAL	**1,294.7**	**100.0**	**2,305.4**	**100.0**	**1,569.0**	**100.0**	**978.1**	**100.0**	**6,147.7**	**100.0**
Degraded	223.5	17.3	419.4	18.2	392.2	25.0	101.7	10.4	1,137.3	18.3

Source : GEMS/GRID 1991 based on GLASOD 1990

Table 6. Extent of soil degradation, by types, in world drylands

Degree	Dry sub-humid		Semi-arid		Arid		Hyper-arid		Total	
	million hectares	%	million hectares	%	million hectares	%	million hectares	%	million hectares	%
None	1071.2	82.7	1886.0	81.8	1176.8	74.1	876.4	89.6	5010.4	81.5
Water	141.0	10.9	213.2	9.3	113.3	7.1	10.9	89.6	478.4	7.8
Wind	46.8	3.6	150.3	6.5	253.3	16.0	80.0	8.2	512.4	8.3
Chemical	22.5	1.7	40.9	1.8	37.3	2.4	10.8	1.1	111.5	1.8
Physical	13.2	1.0	15.1	0.7	6.5	0.4	0.1	0.0	34.9	0.6
TOTAL	**1,294.7**	**100.0**	**2,305.5**	**100.0**	**1,587.2**	**100.0**	**978.2**	**100.0**	**6,147.6**	**100.0**

Source : GEMS/GRID 1991 based on GLASOD, 1990

Table 7.Extent of soil degradation, by types and degrees, in world drylands, in million hectares

Degree	Water	Wind	Chemical	Physcial	Total
Slight	175.1	197.2	44.3	10.8	427.3
Moderate	208.5	215.4	31.4	15.0	470.3
Strong	79.0	18.0	24.2	8.9	130.1
Extreme	4.8	1.8	0.8	0.0	7.5
TOTAL	**467.4**	**432.4**	**100.7**	**34.7**	**1,035.2**

Source : GEMS/GRID 1991 based on GLASOD, 1990

Table 8.Extent of soil degradation in drylands, by continents and zones of aridity

Continent	Dry sub-humid		Semi-arid		Arid		Hyper-arid		Total	
	million hectares	%	million hectares	%	million hectares	%	million hectares	%	million hectares	%
Africa	37.3	13.9	109.5	21.3	172.5	34.2	36.1	5.3	355.4	81.1
Asia	78.3	16.2	141.4	20.4	150.7	24.1	64.0	23.0	434.4	22.3
Australia	4.8	9.2	33.9	11.0	48.9	16.1	0.0	0.0	87.6	13.2
Europe	61.3	33.4	33.4	31.8	4.8	43.2	0.0	0.0	99.5	33.2
N. America	18.3	7.8	53.3	12.8	8.5	9.7	0.1	0.0	80.2	10.9
S. America	23.6	11.5	48.4	18.1	7.6	16.9	1.6	0.0	81.2	15.0
TOTAL	**223.6**	**17.3**	**419.9**	**18.2**	**393.0**	**25.0**	**101.8**	**10.4**	**1,138.3**	**18.3**

Table 9.Estimated indicative average global cost of direct antidesertification measures in irrigated lands within the world's drylands

Major target		A. Prevention of desertification	B. Corrective measures to sustain productivity	C. Rehabilitation of degraded land and its return to productive use		Total
Degree of land degradation		1. Slight to none	2. Moderate	3. Severe	4. Very severe	
Loss of productivity %		0-10	10-25	25-50	50-100	
Main preventive, corrective or reclamative actions		Monitoring of soil and water quality, improvement of soil and water management, introduction of improved crop varieties and appropriate agrotechnologies	Provision of adequate drainage plus as in 1	Intensive leaching and drainage, biological reclamation, later on as in 2	As in 3 plus additional heavy reclamation measures including chemical treatment as appropriate	
Cost per 1 hectare in US $		100-300	500-1,500	2,000-4,000	3,000-5,000	
Africa	Area t.ha	8,522	1,779	122	1	10,424
	Cost million $	852-2,557	890-2,669	244-488	3-5	1,987-5,719
Asia	Area t.ha	60,208	24,335	5,788	1,690	92,021
	Cost million $	6,021-18,062	12,168-36,503	11,756-23,152	5,070-8,450	35,015-86,177
Australia	Area t.ha	1,620	100	130	20	1,870
	Cost million $	162-486	50-150	260-520	60-100	532-1,256
Europe	Area t.ha	9,993	1,340	460	105	11,898
	Cost million $	993-2,998	672-2,010	920-1,840	315-525	2,900-7,373
North America	Area t.ha	15,007	4,930	730	200	20,867
	Cost million $	1,500-9,500	2,465-7,395	1,460-2,920	600-1,000	6,025-20,815
South America	Area t.ha	6,998	1,047	310	60	8,415
	Cost million $	700-2,100	524-1,571	620-1,240	180-300	2,024-5,211
World total	**Area t.ha**	**102,348**	**33,531**	**7,540**	**2,076**	**145,495**
	Cost million $	**10,235-30,704**	**16,766-50,297**	**15,080-30,160**	**6,228-10,380**	**48,309-121,541**

Table 10.Estimated indicative average global cost of direct antidesertification measures in rainfed croplands within the world's drylands

Major target		A. Prevention of desertification	B. Corrective measures to sustain productivity	C. Rehabilitation of degraded land and its return to productive use		Total
Degree of land degradation		1. Slight to none	2. Moderate	3. Severe	4. Very severe	
Loss of productivity %		0-10	10-25	25-50	50-100	
Main preventive, corrective or reclamative actions		Monitoring of soil quality, introduction of appropriate agrotechnologies and improved land management	Introduction of agroforestry plus as in 1	Agrotechnological and biological land amelioration plus as in 2	As in 3 plus additional heavy technical land reclamation works; fixing sand dunes as appropriate	
Cost per 1 hectare in US $		50-150	100-300	500-1,500	2,000-4,000	
Africa	Area t.ha	30,959	43,187	5,153	523	79,822
	Cost million $	1,548-4,644	4,318-12,956	2,577-7,730	1,046-2,092	9,489-27,422
Asia	Area t.ha	95,890	100,638	18,578	3,068	218,174
	Cost million $	4,795-14,384	10,064-30,191	9,289-27,867	6,136-12,272	30,284-84,714
Australia	Area t.ha	27,800	13,900	400	20	42,120
	Cost million $	1,390-4,170	1,390-4,170	200-600	40-80	3,020-9,020
Europe	Area t.ha	10,252	8,538	3,227	89	22,106
	Cost million $	512-1,538	854-2,561	1,614-4,841	178-356	3,158-9,296
North America	Area t.ha	62,588	10,770	721	120	74,199
	Cost million $	3,129-9,388	1,077-3,231	361-1,082	240-480	4,807-14,181
South America	Area t.ha	14,711	5,950	561	124	21,346
	Cost million $	736-2,207	595-1,785	281-842	248-496	1,860-5,330
World total	**Area t.ha**	**242,200**	**182,983**	**28,640**	**3,944**	**457,767**
	Cost million $	**12,109-36,326**	**18,298-54,895**	**14,320-42,960**	**7,808-15,616**	**52,535-149,797**

Table 11.Estimated indicative average global cost of direct antidesertification measures in rangelands within the world's drylands

Major target		A. Prevention of desertification	B. Corrective measures to sustain productivity	C. Rehabilitation of degraded land and its return to productive use		Total
Degree of land degradation		1. Slight to none	2. Moderate	3. Severe	4. Very severe	
Loss of productivity %		0-25	25-50	50-75	75-100	
Main preventive, corrective or reclamative actions		Monitoring of vegetation, introduction of improved rangeland management and pastoralism	Reduction of stock number per unit area of rangeland plus as in 1	Artificial revegetation with appropriate rest period; later as in 1	Continuous rest period for natural recovery with full protection	
Cost per 1 hectare in US $		5-15	10-30	40-60	3-7	
Africa	Area t.ha	347,265	273,615	716,210	5,255	1,342,345
	Cost million $	1,736-5,209	2,736-8,208	28,528-42,973	16-37	33,016-56,427
Asia	Area t.ha	383,630	485,221	691,602	10,787	1,571,240
	Cost million $	1,918-5,754	4,852-14,557	27,664-41,496	32-76	34,466-61,783
Australia	Area t.ha	295,873	227,040	55,310	29,000	657,223
	Cost million $	1,479-4,438	2,270-6,811	2,212-3,319	87-203	6,048-14,771
Europe	Area t.ha	31,053	27,372	51,937	1,208	111,570
	Cost million $	155-466	274-821	2,077-3,116	4-8	2,510-4,411
North America	Area t.ha	71,987	116,102	284,858	10,194	483,141
	Cost million $	360-1,080	1,161-3,483	11,394-17,091	31-71	12,946-21,725
South America	Area t.ha	93,147	88,007	184,431	15,316	380,901
	Cost million $	466-1,397	880-2,640	7,377-11,066	46-107	8,769-15,210
World total	**Area t.ha**	**1,222,955**	**1,267,357**	**1,994,348**	**71,760**	**4,556,420**
	Cost million $	**6,115-18,344**	**12,673-38,021**	**79,774-119,661**	**215-502**	**98,777-176,528**