Annex 2

Tables

Annex 2
Tables

Table 1

Regional level trends for three land-use intensification indicators over the period 1961 to 2001

Region	Use of tractors			Use of mineral fertilisers			Irrigated area		
	Annual growth rate (%)		Crop land[1] per tractor in 2001 (ha)	Annual growth rate (%)		Mineral fertilizers used per ha of crop land[1] in 2001 (Kg)	Annual growth rate (%)		Share of arable and perm. crops in 2001 (%)
	1961–1991	1991–2001		1961–1991	1991–2001		1961–1991	1990–2000	
Asia	11.1	1.7	77.3	9.0	1.5	134.7	1.9	1.4	33.5
Oceania	-0.8	-0.9	139.7	0.7	5.6	59.0	2.6	1.8	4.9
Baltic states and CIS	n.d.	n.d.	67.1	n.d.	n.d.	30.2	n.d.	n.d.	49.5
Eastern Europe	7.1	0.2	19.4	1.4	1.2	80.7	3.8	-1.4	10.2
Western Europe	3.1	-0.2	12.0	2.0	-1.5	180.7	1.9	0.9	15.3
North Africa	4.4	1.3	91.8	4.6	2.1	69.5	1.0	1.6	21.7
Sub-Saharan Africa	0.9	-2.8	773.8	5.0	-1.0	11.1	1.9	0.9	3.7
North America	0.1	0.4	41.5	3.2	1.0	96.3	1.4	0.7	10.2
Latin America and the Caribbean	3.9	-0.2	95.7	6.0	4.2	75.9	2.5	0.8	11.0
Developed countries	2.3	-0.1	33.2	3.0	-2.2	79.1	2.0	0.2	10.6
Developing countries	6.6	1.8	125.3	9.5	1.8	97.1	2.0	1.3	23.2
World	2.5	-0.1	58.0	4.6	0.1	89.6	2.0	1.0	17.9

[1] Includes arable and permanent cropland.
Source: FAO(2006b).

Table 2

Total calories, protein and fat intake and contribution of animal-derived foods in selected regions and countries

Region/Country	Total			Percentage from animal products		
	Calories/ capita/day (Number)	Protein/ capita/day (g)	Fat/capita capita/day (g)	Calories/ capita/day	Protein/ capita/day	Fat/ capita/day
Commonwealth of Independent States	2 793	81	73	21	45	56
North Africa	3 203	88	65	8	21	28
North America	3 588	105	125	22	51	43
Sub-Sahara and South Africa	2 248	55	46	7	21	22
East and Southeast Asia	2 686	65	55	9	29	31
Eastern Europe	3 180	93	107	26	49	59
Latin America and the Caribbean	2 852	77	81	20	48	48
Near East	2 897	80	69	11	25	32
Oceania	2 971	94	115	29	63	54
South Asia	2 394	56	50	9	20	28
Western Europe	3 519	108	150	31	60	55
Australia	3 096	104	135	33	67	53
Brazil	3 006	81	92	22	52	50
China	2 942	82	86	20	37	58
India	2 423	56	52	8	19	25
Developed countries	**3 304**	**100**	**122**	**26**	**56**	**51**
Developing countries	**2 651**	**68**	**65**	**13**	**31**	**41**
World	**2 792**	**75**	**77**	**17**	**38**	**45**

Note: Three–year averages 2000–2002.
Source: FAO (2006b).

Table 3

Grassland area and share of total land covered by grassland in selected regions and countries

Region/Country	Total area of grassland	Percentage of total area as grassland
	(km²)	
North America	7 970 811	41.1
Latin America and the Caribbean	7 011 738	34.2
Western Europe	1 216 683	32.5
Eastern Europe	293 178	25.2
Commonwealth of Independent States	6 816 769	31.1
West Asia and North Africa	1 643 563	13.6
Sub-Saharan Africa and South Africa	7 731 638	31.5
South Asia	661 613	14.9
East and Southeast Asia	5 286 989	32.9
Oceania	5 187 147	58.1
Australia	4 906 962	63.6
China	3 504 907	37.3
India	371 556	11.7
Brazil	2 179 466	25.6
Developed Countries	**19 803 555**	**35.4**
Developing Countries	**18 369 118**	**24.0**
World	**38 172 673**	**28.8**

Source: Own calculation.

Table 4

Estimated net primary productivity in areas dominated by pasture

Region/Country	Mean net primary productivity	Area below 1200 (gr Carbon per m² and year)		Area above 1200 (gr Carbon per m² and year)	
		km²	*%*	*km²*	*%*
Commonwealth of Independent States	726.5	3 057 780	96.7	105 498	3.3
Latin America and the Caribbean	1254.6	2 297 740	47.4	2 548 350	52.6
Western Europe	948.8	766 276	72.4	291 848	27.6
West Asia and North Africa	637.0	1 800 730	92.7	142 480	7.3
Sub-Saharan Africa and South Africa	1226.1	5 066 060	42.8	6 777 050	57.2
South Asia	708.2	224 012	79.0	59 504	21.0
East and Southeast Asia	1158.1	652 412	43.0	863 624	57.0
North America	718.5	4 090 920	90.9	411 074	9.1
Eastern Europe	1080.4	152 280	72.0	59 261	28.0
Oceania	1189.3	143 905	58.3	102 736	41.7
Australia	1065.6	3 895 680	69.4	1 721 570	30.6
Brazil	1637.7	37 424	1.3	2 893 640	98.7
India	385.9	131 927	93.8	8 682	6.2
China	774.5	2 644 020	86.8	402 534	13.2
Developed	**871.0**	**12 473 500**	**79.8**	**3 153 290**	**20.2**
Developing	**1153.1**	**12 486 800**	**48.5**	**13 233 500**	**51.5**
World	**1046.5**	**24 960 300**	**60.4**	**16 386 790**	**39.6**

Note: Summary of Map 4, Annex 1.
Source: Own calculation.

Table 5
Current dominant land use in areas with high suitability for pasture but no current use as pasture

Region/Country	Forest	Forest	Cropland	Cropland	Urban	Urban
	km²	*%*	*km²*	*%*	*km²*	*%*
Commonwealth of Independent States	3 381 180	65.6	1 608 240	31.2	166 923	3.2
Latin America and the Caribbean	3 375 720	87.3	432 466	11.2	60 685	1.6
Western Europe	825 342	46.5	747 410	42.1	201 770	11.4
West Asia and North Africa	40 782	21.4	134 138	70.3	15 933	8.3
Sub-Saharan Africa and South Africa	3 642 730	87.9	442 489	10.7	58 440	1.4
South Asia	51 925	19.1	205 745	75.9	13 486	5.0
East and Southeast Asia	2 167 580	64.1	1 124 630	33.2	91 498	2.7
North America	2 515 240	51.4	2 172 750	44.4	203 408	4.2
Eastern Europe	334 619	36.5	517 651	56.5	64 671	7.1
Oceania	362 790	95.9	13 080	3.5	2 294	0.6
Australia	390 805	79.5	88 358	18.0	12 467	2.5
Brazil	4 766 500	95.3	126 222	2.5	107 969	2.2
India	186 840	22.9	595 042	72.9	34 553	4.2
China	873 628	42.4	1 047 920	50.9	138 976	6.7
Developed	**7 748 680**	**57.0**	**5 205 720**	**38.3**	**650 239**	**4.8**
Developing	**15 161 600**	**76.8**	**4 044 780**	**20.5**	**523 734**	**2.7**
World	**22 910 280**	**68.7**	**9 250 500**	**27.8**	**1 173 973**	**3.5**

Note: Summary of Map 12, Annex 1.
Source: Own calculation.

Table 6
Poultry population, density on agricultural land and ratio to human population in selected regions and countries

Region/Country	No. of animal	No. of animal per agricultural area	No. of animal per human population
	('000 head)	*(head/ha)*	*(head per head)*
North America	2 058 729	4.3	6.7
Latin America and the Caribbean	2 255 899	2.2	4.5
Western Europe	1 097 990	7.5	2.8
Eastern Europe	231 172	3.6	1.9
Commonwealth of Independent States	558 194	1.0	2.0
West Asia and North Africa	1 263 426	2.8	3.3
Sub-Saharan Africa	862 304	0.9	1.4
South Asia	700 772	1.7	0.5
East and Southeast Asia	5 994 579	4.4	3.1
Oceania	111 857	0.1	3.7
Australia	86 968	0.2	4.7
China	3 830 469	6.9	3.1
India	377 000	2.1	0.4
Brazil	877 884	3.3	5.3
Developed	**4 518 867**	**2.5**	**3.5**
Developing	**10 627 741**	**3.3**	**2.3**
World	**15 146 608**	**3.0**	**2.6**

Source: Own calculation.

Table 7
Pig population, density on agricultural land and ratio to human population in selected regions and countries

Region/Country	No. of animals	No. of animals per agricultural area	No. of animals per human population
	('000 head)	*(head/ha)*	*(head per head)*
North America	73 017	0.15	0.24
Latin America and the Caribbean	76 793	0.10	0.15
Western Europe	124 617	0.85	0.32
Eastern Europe	40 177	0.62	0.33
Commonwealth of Independent States	31 160	0.06	0.11
West Asia and North Africa	665	0.00	0.00
Sub-Saharan Africa	20 480	0.02	0.03
South Asia	14 890	0.07	0.01
East and Southeast Asia	528 673	0.66	0.27
Oceania	5 509	0.01	0.18
Australia	2 733	0.01	0.15
China	452 215	0.82	0.36
India	13 867	0.08	0.01
Brazil	32 060	0.12	0.19
Developed	**285 215**	**0.16**	**0.22**
Developing	**632 420**	**0.20**	**0.14**
World	**917 635**	**0.18**	**0.16**

Source: Own calculation.

Table 8
Cattle population, density on agricultural land and ratio to human population in selected regions and countries

Region/Country	No. of animals	No. of animals per agricultural area	No. of animals per human population
	('000 head)	*(head/ha)*	*(head per head)*
North America	110 924	0.23	0.36
Latin America and the Caribbean	357 712	0.46	0.71
Western Europe	84 466	0.58	0.21
Eastern Europe	16 042	0.25	0.13
Commonwealth of Independent States	58 395	0.10	0.21
West Asia and North Africa	31 759	0.07	0.08
Sub-Saharan Africa	213 269	0.21	0.35
South Asia	246 235	1.09	0.19
East and Southeast Asia	152 578	0.19	0.08
Oceania	37 796	0.08	1.26
Australia	27 726	0.06	1.49
China	103 908	0.19	0.08
India	191 218	1.06	0.20
Brazil	177 204	0.67	1.07
Developed	**326 830**	**0.18**	**0.25**
Developing	**983 781**	**0.31**	**0.22**
World	**1 310 611**	**0.26**	**0.22**

Source: Own calculation.

Table 9

Small ruminant population, density on agricultural land and ratio to human population in selected regions and countries

Region/Country	No. of animals	No. of animals per agricultural area	No. of animals per human population
	('000 heads)	*(head/ha)*	*(head per head)*
North America	9 132	0.02	0.03
Latin America and the Caribbean	115 514	0.15	0.23
Western Europe	121 574	0.83	0.31
Eastern Europe	20 902	0.32	0.17
Commonwealth of Independent States	59 649	0.11	0.21
West Asia and North Africa	227 378	0.50	0.59
Sub-Saharan Africa	370 078	0.37	0.60
South Asia	298 822	1.33	0.23
East and Southeast Asia	345 716	0.43	0.18
Oceania	153 302	0.32	5.11
Australia	112 202	0.25	6.03
China	289 129	0.52	0.23
India	181 300	1.00	0.19
Brazil	24 008	0.09	0.14
Developed	**400 136**	**0.22**	**0.31**
Developing	**1 322 038**	**0.42**	**0.29**
World	**1 722 175**	**0.34**	**0.29**

Source: Own calculation.

Table 10

Maize trade at regional level: 2001 to 2003 average and increment over the previous 15 years

From / To	Asia		Sub-Saharan Africa		North Africa		EU-15		Eastern Europe	
	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase
		(%)		*(%)*		*(%)*		*(%)*		*(%)*
Asia	**11 669**	**853.1**	193.6	207.3	0.6	-	8.8	-92.0	293.3	82.9
Sub-Saharan Africa	220.5	574.3	**759.6**	**94.7**	0.1	-	26.5	-54.6	6.7	-14.1
North Africa	41.8	386.0	1.7	-	**43.4**	**-**	24.6	-92.1	83	-7.0
EU-15	6.8	-44.3	4.9	345.5	0.2	-	**8 837.4**	**41.7**	806.5	257.6
Rest of Western Europe	0	-100.0	0.1	-	0.8	-	20.4	-87.6	**38.6**	**-38.3**
Eastern Europe	0.5	-98.7	0.3	-	0	-	64.1	32.2	892.9	237.2
Baltic and CIS	6.7	-99.4	0.2	-	0	-	6	-88.0	130	-69.1
North America	0.3	-	0.2	-	0	-	0.7	-56.3	2.5	733.3
South America	0.2	-100.0	0.6	-90.3	0	-	0.3	-76.9	0	-
Central America and the Caribbean	16.7	53.2	1.7	-	0	-	0.1	-99.8	0	-100.0
Oceania	2.6	-99.8	0	-	0	-	0	-100.0	0	-

From / To	Baltic and CIS		North America		South America		Cntral America and the Caribbean		Oceania	
	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase
		(%)		*(%)*		*(%)*		*(%)*		*(%)*
Asia	79.1	n.a.	24 120	13.0	6 631.8	362.8	0	-	23.6	-51.3
Sub-Saharan Africa	0.3	n.a.	404.9	180.4	525.8	879.1	7.3	-	3	-
North Africa	113.9	n.a.	5 791.7	143.9	2 347.4	452.3	0	-	0	-
EU-15	45.9	n.a.	68.6	-97.6	2 530.5	276.7	0	-	0.1	-50.0
Rest of Western Europe	0.5	n.a.	45.7	182.1	164.3	466.6	6.7	-	0	-
Eastern Europe	n.a.	10.7	-98.1	201	104.3	0	-	0	-	
Baltic and CIS	**261**	**n.a.**	43.8	-99.2	7.8	-99.0	0	-	0	-
North America	n.a.	3 799.9	**998.2**	**56.7**	18.6	37	469.2	0	-	
South America	14.8	n.a.	2 815.9	138.8	**2 745.9**	**431.1**	4.3	-	0.2	-
Central America and the Caribbean	10.2	n.a.	9 162.2	147.4	131	-75.0	**19.4**	**-**	0	-
Oceania	0	n.a.	22.2	404.5	0	-	0	-	**23.1**	**50.0**

Note: n.a. – data unavailable for the period 1986 to 1988.
- : negligible volume traded for the 2001 to 2003 average.

Source: FAO (2006b).

Table 11

Soybean trade at the regional level: 2001–2003 average and increment over the previous 15 years

From	USA		Brazil		Argentina	
	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase
		(%)		*(%)*		*(%)*
Total production	73 424.7	49.1	43 829.5	172.1	30 614.7	287.5
Total exports	29 128.8	44.2	17 178.7	655.5	7 412.6	266.6
Destination by region						
Asia	16 935.3	127.0	6 305.8	1 813.7	6 207.1	7 342.6
Sub-Saharan Africa	6.2	-71.9	0	-100.0	19.5	-
North Africa	336.3	294.7	111.9	-	193.8	-
EU-15	5 587.9	-38.5	9 852.7	498.6	745.4	-37.4
Rest of Western Europe	19.1	-90.2	404	859.6	0.3	-99.1
Eastern Europe	45.4	-91.2	106.8	87.0	5.4	-93.1
Baltic states and CIS	65.6	-92.0	17.7	5 800.0	0	-100.0
North America	640.7	311.2	2.2	-	12.7	-
South America	213.5	-62.8	248.8	82 833.3	198.7	-
Central America and the Caribbean	4 563.4	279.1	128.7	4 190.0	29.8	33.6
Oceania	18.6	-41.9	0	-100.0	0	-

From	Paraguay		Canada		India		China	
	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase
		(%)		*(%)*		*(%)*		*(%)*
Total production	3 671.9	212.3	2 079.7	84.5	5 773.6	419.1	15 768.3	33.5
Total exports	2 019.1	103.1	671.8	233.9	83.3	-	263.9	-82.6
Destination by region								
Asia	14.3	-	344.7	353.0	83.1	3 362.5	253.9	-52.7
Sub-Saharan Africa	0.1	-	0.3	200.0	0	-	0	-
North Africa	0	-100.0	5.6	51.4	0	-	0	-
EU-15	62.5	-75.5	200.7	208.3	0	-	7.8	13.0
Rest of Western Europe	208.6	104.5	0	-100.0	0	-	0	-
Eastern Europe	0	-	1.1	-	0	-	0.1	-99.3
Baltic states and CIS	1.7	-	0.1	-99.5	0	-	0.3	-99.9
North America	0	-100.0	112.5	224.2	0.1	-	0.9	-
South America	1 383.8	1 176.6	0	-	0	-	0.6	-92.7
Central America and the Caribbean	348.1	234.7	6.3	-	0	-	0	-
Oceania	0	-	0.4	-	0	-	0.4	-

Note: n.a. : data unavailable for the period 1986 to 1988.
–: negligible volume traded for the 2001 to 2003 average.
Source: FAO (2006b).

Table 12

Soymeal trade at regional level: 2001–2003 average and increment over the previous 15 years

From / To	Asia		Sub-Saharan Africa		North Africa		EU-15		Eastern Europe	
	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase
		(%)		*(%)*		*(%)*		*(%)*		*(%)*
Asia	**2 890.3**	**177.1**	0.1	-	0	-	30.7	-72.3	0	-
Sub-Saharan Africa	10.5	218.2	**6.8**	**-50.0**	8.8	-	13.5	-2.9	0	-
North Africa	41.3	3.8	0.2	-	**0**	**-**	27.5	-69.3	0	-
EU-15	7.7	-96.8	0.2	-	0	-	**4 417.9**	**38.2**	1.5	-
Rest of Western Europe	0.1	-99.7	0	-	0	-	143.1	530.4	**0**	**-**
Eastern Europe	1.5	-99.6	0	-	0	-	1 617.6	1 202.4	40.3	-
Baltic and CIS	3.7	-93.5	0	-	0	-	217.4	-14.6	3.4	-
North America	0.2	-96.8	0	-	0	-	0.7	250.0	0	-
South America	0.5	-	0.1	-	0	-	0.4	-50.0	0	-
Central America and the Caribbean	0	-100.0	0	-	0	-	0.3	-91.4	0	-
Oceania	3.7	208.3	0	-	0	-	27.4	6750.0	0	-

From / To	Baltic and CIS		North America		South America		Cntral America and the Caribbean		Oceania	
	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase
		(%)		*(%)*		*(%)*		*(%)*		*(%)*
Asia	0	n.a.	2 122.9	196.9	6 361.9	-	0	-	0	-
Sub-Saharan Africa	0	n.a.	4.8	-94.5	532.8	366.1	0	-	0	-
North Africa	0	n.a.	421	10.0	1 298.7	714.2	0	-	0	-
EU-15	0	n.a.	345.7	-85.0	18 875.8	223.1	10.9	-	0	-
Rest of Western Europe	0	n.a.	2.2	450.0	36.1	163.5	0	-	0	-
Eastern Europe	0	n.a.	13.4	-93.2	851.9	-49.3	0	-	0	-
Baltic and CIS	**14**	**n.a.**	106	-77.2	9.8	-99.3	0	-	0	-
North America	1	n.a.	**764.4**	**3.5**	46.1	-	1.1	-57.7	0	-
South America	2	n.a.	324	-54.9	**1 912.8**	**-**	14.8	-	0	-
Central America and the Caribbean	0	n.a.	1 509.8	256.4	82.6	-54.6	**30.2**	**174.5**	0	-
Oceania	0	n.a.	322.8	701.0	190.3	-	0	-	**0.2**	**-75.0**

Note: n.a. : data unavailable for the period 1986 to 1988.
–: negligible volume traded for the 2001 to 2003 average.
Source: FAO (2006b).

Table 13

Bovine meat trade at regional level: 2001 to 2003 average and increment over the previous 15 years

From / To	Asia		Sub-Saharan Africa		North Africa		EU-15		Eastern Europe	
	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase
		(%)		*(%)*		*(%)*		*(%)*		*(%)*
Asia	**271.1**	**330.3**	1.9	533.3	0.4	-	132.5	-45.8	0.3	-97.3
Sub-Saharan Africa	42.3	-	**48.7**	**-**	0.0	-	42.0	-79.5	0.0	-100.0
North Africa	9.7	-	1.3	-	**0.0**	**-**	2.4	-98.3	0.0	-100.0
EU-15	8.8	-	14.5	29.5	0.1	-	**1 514.4**	**6.7**	23.3	-57.2
Rest of Western Europe	0.9	-	2.0	-	0.0	-	9.4	-30.4	**0.2**	**-89.5**
Eastern Europe	0.6	-	0.0	-	0.0	-	24.3	-68.6	40.0	273.8
Baltic and CIS	31.7	-11.9	0.0	-	0.0	-	351.5	343.3	23.0	-63.5
North America	2.5	-	0.0	-	0.0	-	1.7	-98.1	0.1	-99.3
South America	0.2	-	0.0	-	0.0	-	0.6	-99.5	0.0	-100.0
Central America and the Caribbean	0.1	-90.0	0.0	-	0.0	-	1.2	-90.3	0.0	-100.0
Oceania	0.4	-	0.0	-	0.0	-	0.2	-98.2	0.1	0.0

From / To	Baltic and CIS		North America		South America		Cntral America and the Caribbean		Oceania	
	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase
		(%)		*(%)*		*(%)*		*(%)*		*(%)*
Asia	0.2	n.a.	680.5	260.6	270.1	108.6	1.0	-60.0	686.5	173.3
Sub-Saharan Africa	0.0	n.a.	0.3	0.0	21.9	-28.9	0.0	-	3.6	-
North Africa	0.0	n.a.	8.2	-	132.9	-	0.0	-	4.5	-
EU-15	0.8	n.a.	3.5	-65.0	390.5	84.1	0.0	-	11.1	-31.9
Rest of Western Europe	0.0	n.a.	1.4	75.0	9.0	-13.5	0.0	-	2.5	177.8
Eastern Europe	0.0	n.a.	0.4	-	52.3	-	0.0	-	2.2	-
Baltic and CIS	**236.3**	**n.a.**	5.4	-	53.1	-	0.0	-	6.9	-
North America	0.0	n.a.	**520.8**	**416.7**	161.3	86.5	42.5	-14.8	903.7	14.3
South America	0.0	n.a.	3.4	-87.7	**208.9**	**139.3**	2.0	-	0.1	-
Central America and the Caribbean	0.0	n.a.	333.8	2 110.6	16.3	3.2	**29.1**	**627.5**	19.8	219.4
Oceania	0.0	n.a.	1.4	75.0	0.6	500.0	0.0	-	**40.6**	**50.4**

Note: n.a. : data unavailable for the period 1986 to 1988.
–: negligible volume traded for the 2001 to 2003 average.
Source: FAO (2006b).

Table 14

Poultry meat trade at regional level: 2001 to 2003 average and increment over the previous 15 years

From / To	Asia		Sub-Saharan Africa		North Africa		EU-15		Eastern Europe	
	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase
		(%)		*(%)*		*(%)*		*(%)*		*(%)*
Asia	**915.9**	**526.5**	1.6	-	0.6	500.0	291	48.4	6.7	-53.5
Sub-Saharan Africa	7.6	-	**10.9**	**-**	0.1	-	215.9	149.3	0.4	-60.0
North Africa	0.2	100.0	0	-	**0**	**-**	2.9	-62.8	0.2	-92.3
EU-15	194	-	2.7	-	0.6	-	**1 836.9**	**265.6**	143.2	130.6
Rest of Western Europe	9	718.2	0	-	0	-	25.5	9.9	**8.6**	**-18.9**
Eastern Europe	19.9	-	0	-	0	-	123.3	-	47.8	414.0
Baltic and CIS	28.8	-	0	-	0	-	304.5	-	26.8	-82.5
Norh America	2.9	314.3	0.1	-	0	-	1.7	54.5	0	-100.0
South America	2.6	-	0.2	-	0	-	0.8	-87.5	0	-100.0
Central America and the Caribbean	1.1	-	0	-	0	-	20	-6.5	0	-100.0
Oceania	0.8	-38.5	0	-	0	-	4.8	6.7	0.2	100.0

From / To	Baltic and CIS		North America		South America		Cntral America and the Caribbean		Oceania	
	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase	'000 tonnes	Increase
		(%)		*(%)*		*(%)*		*(%)*		*(%)*
Asia	0.1	n.a.	946	382.9	927	378.1	1.1	-	9.7	781.8
Sub-Saharan Africa	0	n.a.	104.9	-	115.9	-	0	-	9.9	-
North Africa	0	n.a.	1.9	-90.9	2.8	27.3	0	-		-
EU-15	0.1	n.a.	48.9	304.1	375.4	-	0	-	0	-
Rest of Western Europe	0	n.a.	2.6	420.0	3	-57.7	0	-	0	-
Eastern Europe	0.3	n.a.	122.2	-	30.5	-	0	-	0	-
Baltic and CIS	**34.2**	**n.a.**	1022.5	-	225.2	-	0	-	0.2	-
Norh America	0.1	n.a.	**164.1**	**374.3**	2.5	-	3.8	-	0	-
South America	0	n.a.	43.5	-	**31.6**	**212.9**	0.4	-	0	-
Central America and the Caribbean	0	n.a.	502.6	570.1	43.5	559.1	**5.2**	**-**		-
Oceania	0	n.a.	25.2	334.5	1.5	-	0	-	**5.7**	**159.1**

Note: n.a. : data unavailable for the period 1986 to 1988.
–: negligible volume traded for the 2001 to 2003 average.
Source: FAO (2006b).

Table 15

Major meat trade flows in the 2001-2003 period, their volume and related sea transport CO_2 emission

Country of origin	Destination countries	Traded quantity (10^3 tonnes)	Fossil fuel CO_2 emission (10^3 tonnes)
Bovine meat			
United States	Canada, Japan, Hong Kong, Korea, Mexico	1 000	34
Australia	USA, Canada, Japan, South Korea	1 055	61
Brazil	Hong Kong, EU, Saudi Arabia, USA, Egypt	390	28
Canada	USA, Mexico	497	7
New Zealand	USA, Canada	418	20
	share of global trade:	**60%**	**150**
Poultry meat			
USA	China, Hong Kong, Japan, South Korea, Russia, Mexico, Canada	2 093	137
Brazil	Japan, Hong Kong, Russia, Saudi Arabia, EU	921	82
European Union	Russia, Saudi Arabia	342	9
China	Japan	364	4
Thailand	EU, Japan	381	20
Hong Kong	China	660	5
	share of global trade:	**63%**	**257**
Pig meat			
Canada	Japan, USA	543	14
European Union	Japan, Russia	473	34
United States	Japan, Mexico	400	12
Brazil	Hong Kong, Russia	247	23
China	Hong Kong, Russia	133	1
	share of global trade:	**53%**	**85**

Source: Data on meat trade flows – FAO (2006b).

Table 16

Possible contribution of livestock to the extinction of species through habitat loss or degradation

Species	Description
ANIMALS	**Amphibia**
Atelopus longirostris	Endemic to the northwestern versant of the Andes of Ecuador, in the provinces of Esmeraldas, Imbabura, Cotopaxi, and Pichincha at 500–2 500 m above sea level (asl). It was a terrestrial species, living in lowland and montane tropical rain forests. The decline of the population is unexplained, and is possibly due to chytridiomycosis. Other possible factors include climate change, pollution and habitat loss, though these are unlikely to explain the level of decline that has been observed.
Atelopus vogli	Endemic to the Pozo del Diablo in the river Güey, on the southern versant of the Cordillera de la Costa, Venezuela. The original habitat (humid forest) at the type locality has been drastically modified by repeated clearing and burning. A savanna-like environment remains. It is presumed that the area formerly supported a semi-deciduous forest. The species is believed to have become extinct following drastic modification of habitat for agricultural use.
Eleutherodactylus chrysozetetes	This species was endemic to Quebrada de Oro in the Rio Viejo, Honduras, at 880–1 130 m asl. I It was found along streams in premontane wet forest. It was probably unable to survive the severe degradation of its habitat that has taken place. The threats include deforestation as a result of agricultural and livestock encroachment, human settlements, logging, fires and landslides. Chytridiomycosis may have also contributed.
Eleutherodactylus milesi	Endemic to the premontane wet forest and lower montane wet forest of mountains of west and northwest of Honduras at 1 050–1 720 m asl. It was clearly adversely affected by habitat description caused by subsistence agriculture and by chytridiomycosis.
Rheobatrachus silus	An Australian endemic species, lived in rainforest, wet sclerophyll forest and riverine gallery open forest and restricted to elevations between 350–800 m asl in the Blackall and Conondale Ranges in southeast Queensland. The reason(s) for the disappearance of this species remains unknown. Its habitat is currently threatened by feral pigs, invasion of weeds (especially mistflower Ageratina riparia), and altered flow and water quality due to upstream disturbances and possible to chytridiomycosis.
Rheobatrachus vitellinus	An Australian endemic was found exclusively in undisturbed rainforest in Eungella National Park, mid-eastern Queensland at altitudes of 400–1 000 m asl (Covacevich and McDonald 1993). The extent of occurrence of the species was less than 500 km². The cause(s) of the population decline remain unknown. Possible reasons habitat destruction by seasonal fire, fragmentation, weeds, surface water extraction and chytridiomycosis.
	Birds
Cabalus modestus	Endemic to Chatham, Mangere and Pitt Islands, New Zealand. Its extinction was presumably caused by predation by rats and cats, habitat destruction to provide sheep pasture (which destroyed all of the island's bush and tussock grass by 1900), and from grazing by goats and rabbits.
Caracara lutosa	This species was endemic to Isla Guadalupe, Mexico. The island was once heavily vegetated, but grazing by goats has almost entirely denuded it. The primary cause of the species' decline was direct decimation by settlers.
Coturnix novaezelandiae	Endemic to open habitats, especially grass-covered downs, on North, South and Great Barrier Islands, New Zealand. It was considered fairly common until the mid-19th century, but declined rapidly to extinction by 1875. Extinction was caused by large-scale burning, predation by dogs, cats and rats, and grazing by sheep and by diseases spread by introduced gamebirds.

(cont.)

Table 16 *(cont.)*

Possible contribution of livestock to the extinction of species through habitat loss or degradation

Species	Description
Drepanis funerea	Endemic to the forest understorey on Molokai, Hawaii, USA. Its extinction was probably largely caused by the destruction of its understorey habitat by introduced cattle and deer, and predation by rats and mongooses.
Moho bishopi	Endemic to forest in the Hawaiian Islands, USA. Habitat destruction caused by conversion to agriculture and grazing by feral mammals inevitably initiated the species' decline, with introduced black rat Rattus rattus and the spread of disease carried by introduced mosquitoes blamed for the population decline.
Myadestes myadestinus	Endemic to Kaua'i in the Hawaiian Islands (USA), where it was probably restricted to dense montane forest. It was the most common of the forest birds. Disease carried by introduced mosquitoes and the destruction and degradation of forests are likely to have been the chief causes of extinction. The advance of feral pigs into pristine upland forests degraded habitat and facilitated the spread of mosquitoes. Competition with introduced birds may have exacerbated the problems faced by this species.
Sceloglaux albifacies	Endemic to New Zealand with the nominate race on the South and Stewart Islands. The species roosted and nested among rocks in open country and on forest edge. Causes of the species' extinction are obscure, possibly habitat modification through grazing or burning, or predation by introduced rats.
Psephotus pulcherrimus	Found in open savanna woodland and shrubby grassland in central and southern (and possibly northern) Queensland and northern New South Wales, Australia. Its decline was probably caused by a reduction of its food supply (native grass seeds) due to drought, overgrazing, altered fire frequencies and the spread of prickly pears, with disease, trapping and egg-collecting, predation of nests by introduced and native species and clearance of eucalypti by ring barking also contributing.
PLANTS	**Magnoliopsida**
Nesiota elliptica	Endemic to St Helena island. A small tree that was known to be pollinated by an endemic syrphid fly, which also visits other endemic trees. The threat to this species was loss of habitat through felling for timber and to make way for plantations. Humans have exploited the island's resources for over 450 years, destroying much of the native vegetation through deforestation for timber and agriculture, and the grazing of introduced goats.
Cyanea marksii	A small palm-like tree recorded in the rainforest to Kona District on Hawaii. The forests and rare plants of South Kona are threatened by cattle grazing, logging, feral pigs, and alien plants. The plants are also naturally threatened by lava flows from Mauna Loa.
Melicope haleakalae	A small tree or shrub last seen in 1919 at Ukuele, on Maui. Habitat and Ecology Was found in rainforest at 1,220 m. Known only from the northwestern flank of Haleakala, Maui. The status of this species is unclear; it may be more common than currently thought. Threats include feral pigs and alien plants.
Melicope paniculata	Endemic to Lihue Ditch Trail at 875 m and from Waihiawa Bog at 580 m. Threatened by feral pigs, goats, alien plants.
Oldenlandia adscenionis	Found on Green Mountain on the northern and western slopes between 356 m and 680 m. This species was very susceptible to grazing mammals. Introduced plants have completely replaced the original vegetation communities and livestock (sheep and donkeys now present) goats were likely to have been historically responsible for the decline.

(cont.)

Table 16 *(cont.)*

Possible contribution of livestock to the extinction of species through habitat loss or degradation

Species	Description
Wikstroemia skottsbergiana	It appears the species may be extinct from its only locations in Hanalei and Kauhao Valleys on Kauai.The rare native plants of Hanalei Valley and the Wahiawa Mountains are threatened by feral pigs and alien plants.
Wikstroemia villosa	Was known from the windward side of Hakeakala on East Maui and from two collections from the ridges in Wailuku Valley on West Maui. A montane rainforest species. Parts of its range have been converted into pasture. Major threats are feral pigs and alien plants. It was also possibly threatened by deer, cattle, and feral goats.
	Liliopsida
Sporobolus durus	The introduction of species such as Melinis minutiflora (pioneer grass widely used for grazing) are likely to be responsible for the decline. M minutiflora as an easily established (by sowing) and productive grass of acceptable nutritive value; also used for soil conservation on steep slopes with poor soils. Resistant to drought but not to fire or water logging. Continues to grow throughout the year with some rainfall. Must be well established before grazing. Palatable to cattle once they become used to the smell.

Source: Compiled from IUCN, NatureServe, BirdLife International and ARKive.