

September 2012

E



منظمة الأغذية
والزراعة للأمم
المتحدة

联合国
粮食及
农业组织

Food and
Agriculture
Organization
of the
United Nations

Organisation des
Nations Unies
pour
l'alimentation
et l'agriculture

Продовольственная и
сельскохозяйственная
организация
Объединенных
Наций

Organización
de las
Naciones Unidas
para la
Alimentación y la
Agricultura

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Item 3.1 of the Provisional Agenda

INTERGOVERNMENTAL TECHNICAL WORKING GROUP ON ANIMAL GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Seventh Session

Rome, 24-26 October 2012

STATUS AND TRENDS OF ANIMAL GENETIC RESOURCES – 2012¹

Table of Contents

	Pages
I. INTRODUCTION	3
II. STATE OF REPORTING	3
III. BREED DIVERSITY	5
IV. RISK STATUS OF ANIMAL GENETIC RESOURCES.....	9
V. TRENDS IN BREED STATUS	13
VI. TRENDS IN GENETIC EROSION	13
VII. CONCLUSIONS	15
Annex 1. Status of population data reported by each country and region	16
Annex 2. Number of local and transboundary breeds by risk status category reported by each country and region	24

¹ Based on data reported by National Coordinators for the Management of Animal Genetic Resources to DAD-IS by June 2012.

This document is printed in limited numbers to minimize the environmental impact of FAO's processes and contribute to climate neutrality. Delegates and observers are kindly requested to bring their copies to meetings and to avoid asking for additional copies. Most FAO meeting documents are available on the Internet at www.fao.org

Table

1	Status of information recorded in the Global Databank for Animal Genetic Resources.....	4
2	Mammalian species – number of reported local breeds	7
3	Avian species – number of reported local breeds.....	7
4	Mammalian species – number of reported regional transboundary breeds	8
5	Avian species – number of reported regional transboundary breeds	8
6	Mammalian species – number of reported international transboundary breeds.....	8
7	Avian species – number of reported international transboundary breeds	8
8	Number of extinct mammalian breeds	12
9	Number of extinct avian breeds.....	12
10	Years of extinction	12

Figure

1	Proportion of national breed populations for which population figures have been reported.....	4
2	Number of local and transboundary breeds at global level	5
3	Number of local and transboundary breeds at regional level.....	6
4	Proportion of the world's breeds by risk status category	9
5	Risk status of the world's mammalian breeds in June 2012 absolute (table) and percentage (chart) figures by species	10
6	Risk status of the world's avian breeds in June 2012: absolute (table) and percentage (chart) figures by species	10
7	Risk status of the world's mammalian breeds in June 2012: absolute (table) and percentage (chart) figures by region.....	11
8	Risk status of the world's avian breeds June 2012: absolute (table) and percentage (chart) figures by region	11
9	Local, regional and international breeds – 2000 to 2012	13
10	Changes in risk status of transboundary breeds from 2000 to 2012.....	14
11	Changes in the risk status of local breeds from 2000 to 2012.....	14

STATUS AND TRENDS OF ANIMAL GENETIC RESOURCES - 2012

I. INTRODUCTION

In line with the request of the Twelfth Regular Session of the Commission on Genetic Resources for Food and Agriculture, this report follows the structure set out in the document *Format and content of future status and trends reports on animal genetic resources*². The analysis is based on FAO's Global Databank for Animal Genetic Resources, backbone of the Domestic Animal Diversity Information System (DAD-IS). It updates the data published in the report *Status and trends of animal genetic resources – 2010*³. All National Coordinators for the Management of Animal Genetic Resources were asked to update their national data as fully as possible prior to the analysis.

The document begins by describing the state of reporting on animal genetic resources, and the progress made during the reporting period. A description of the current regional distribution of livestock species and breeds is then presented, followed by an overview of the risk status of the world's livestock breeds. Finally, trends in risk status over the reporting period are assessed. The annexes to the document provide a detailed breakdown of the status of data entry by country and by region. Countries can use this information to review their progress and assess where they stand in relation to other countries in their regions.

II. STATE OF REPORTING

The Global Databank for Animal Genetic Resources currently contains data from 182 countries and 37 species. The total number of national breed populations recorded in the Global Databank has increased during the reporting period (Table 1). The total number of mammalian national breed populations recorded in June 2012 was 10 712 as compared to 10 507 in October 2010. The total number of avian national breed populations recorded in 2012 was 3 482, compared 3 414 in 2010.

Since 2010, the percentage of avian breeds for which any population data are available has increased from 47 percent to 48 percent, while in the case of mammals there has been an improvement from 54 percent to 57 percent (Table 1). Seven countries updated their national data in 2011 and 28 in 2012. However, for 86 percent of national breed populations, no data on population size have been reported for any of the last four years (2009, 2010, 2011 and 2012). Figure 1 provides a regional breakdown of the reporting figures.

The number of breed populations recorded by countries in the European and the Caucasus region increased by more than 300 compared to 2010. Besides this enormous increase in the absolute number, the percentage of populations with population figures increased for mammalian breeds from 77 percent in 2010 to 79 percent in 2012.

² CGRFA/WG-AnGR-5/09/3.2

(http://www.fao.org/ag/againfo/programmes/en/genetics/documents/ITWG_AnGR_5_09_3_2.pdf).

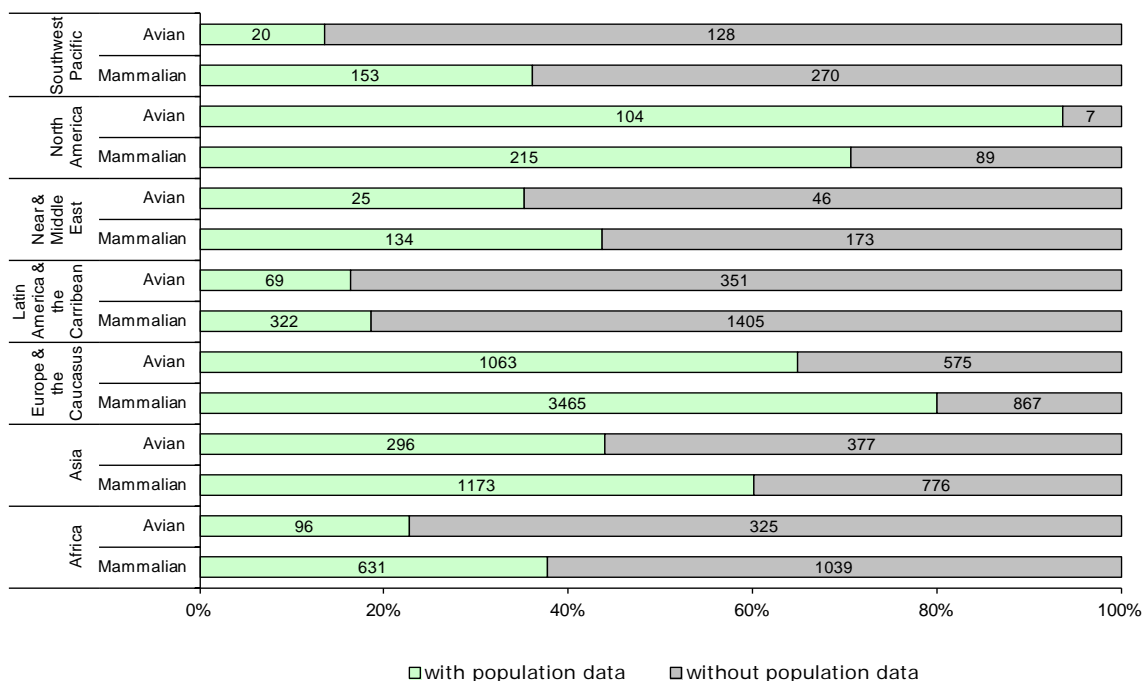
³ CGRFA-13/11/Inf.17 (<http://www.fao.org/docrep/meeting/022/am649e.pdf>).

Table 1. Status of information recorded in the Global Databank for Animal Genetic Resources

Year of analysis	Mammalian species		Avian species		Countries covered
	Number of national breed populations	% with population data	Number of national breed populations	% with population data	
1993	2719	53	-	-	131
1995	3019	73	863	85	172
1999	5330	63	1049	77	172
2006	10512	43	3505	39	181
2008	10550	52	3450	47	181
2010	10507	54	3414	47	182
2012	10712	57	3482	48	182

No data recorded for Andorra, Brunei Darussalam, Liechtenstein, Marshall Islands, Micronesia (Federated States of), Monaco, Nauru, Qatar, San Marino, Singapore, South Sudan, Timor-Leste, United Arab Emirates, Western Sahara.

Figure 1. Proportion of national breed populations for which population figures have been reported



III. BREED DIVERSITY

A global total of 8 262 breeds (compared to 8 054 in 2010 and 8 091 in 2008) have been reported; 7 202 are local breeds (compared to 7 001 in 2010 and 7 040 in 2008) and 1 060 are transboundary breeds (compared to 1 053 in 2010 and 1 051 in 2008). Among the transboundary breeds, 509 (compared to 504 in 2010 and 500 in 2008) are regional transboundary breeds (occur in only one region) and 551 (compared to 549 in 2010 and 551 in 2008) are international transboundary breeds (occur in more than one region). A total of 628 breeds (compared to of 631 in 2010 and 695 in 2008) are classified as extinct, of which 7 (compared to 7 in 2010 and 7 in 2008) are transboundary breeds (6 regional and 1 international). The decline in the number of reported extinct breeds has occurred because of corrections made by National Coordinators to their national breed inventories in DAD-IS. In the following analysis of breed diversity, extinct breeds are excluded.

Figure 2 shows the share of local, regional transboundary and international transboundary breeds among the mammalian and avian breeds of the world. More than two-thirds of reported breeds belong to mammalian species. In these species, the number of regional transboundary breeds is higher than the number of international transboundary breeds. Conversely, in avian species there are about twice as many international transboundary breeds as there are regional transboundary breeds.

In all regions of the world, mammalian breeds outnumber avian breeds (Figure 3). There is, however, considerable variation between regions in terms of the share of the three breed distribution categories in the total number of breeds. In Europe and the Caucasus, Asia, and the Near and Middle East, local breeds make up more than three-quarters of all breeds. In Africa, and Latin America and the Caribbean, the share of local breeds is smaller, but still exceeds 60 percent of all breeds. Conversely, international transboundary breeds make up more than 50 percent of the total in the Southwest Pacific and North America (Figure 3).

Regional transboundary mammalian breeds are relatively numerous in Europe and the Caucasus and Africa, and to lesser extent in North America, Asia, and Latin America and the Caribbean. It is only in Europe and the Caucasus that there are a significant number of regional transboundary avian breeds.

Figure 2. Number of local and transboundary breeds at global level

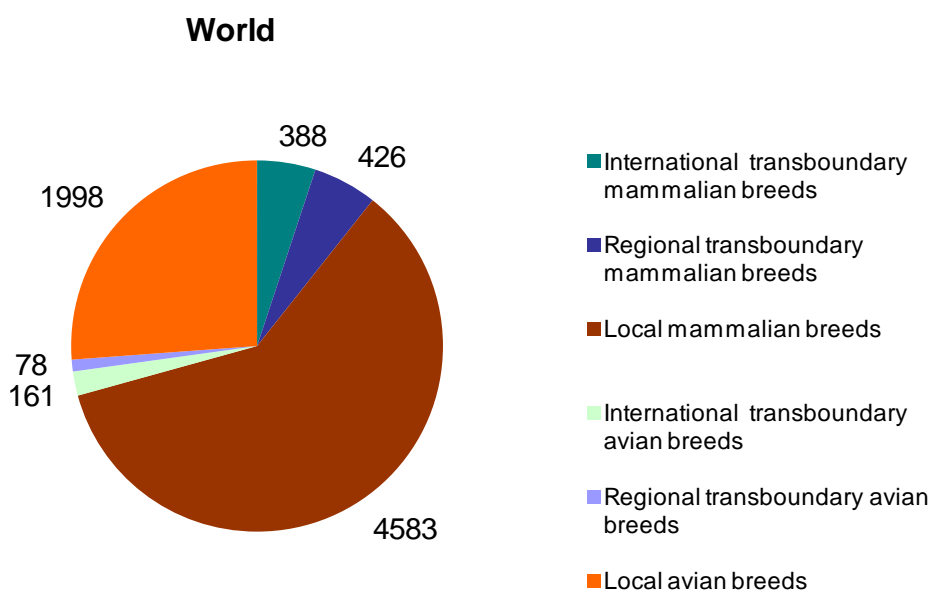
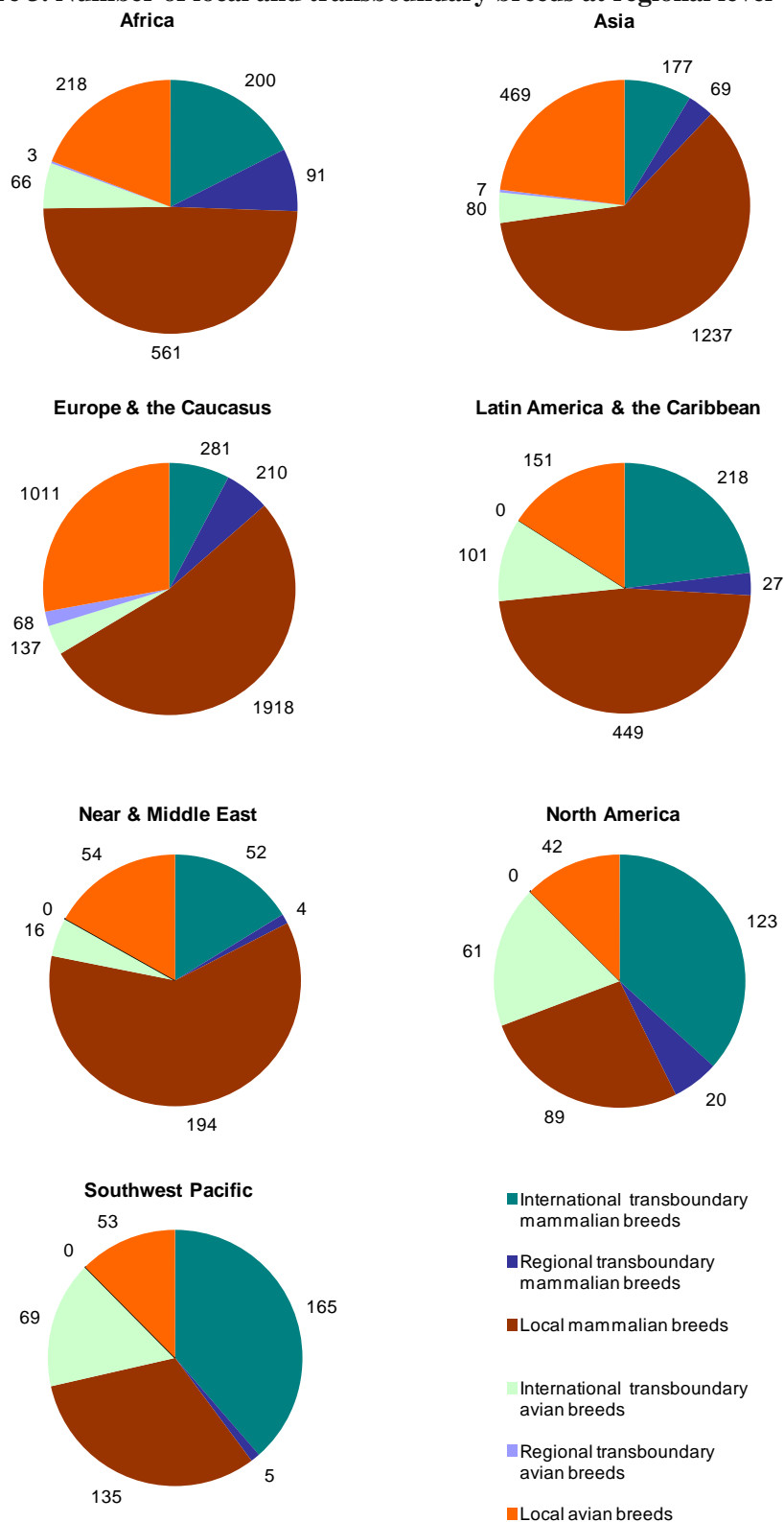


Figure 3. Number of local and transboundary breeds at regional level



Note that international transboundary breeds are counted in each region where they occur. Therefore, for this category of breeds, the global total is not the sum of the regional totals.

Tables 2 and 3, respectively, show the number of reported local breeds of mammalian and avian species for each region of the world. For most livestock species, Europe and the Caucasus or Asia are the regions that have the highest number of local breeds. The dromedary, with most local breeds located in Africa and the Near and Middle East, and the guinea pig, with most local breeds located in Latin America and the Caribbean, are exceptions to this pattern. Between 2010 and 2012, some additional local breeds have been reported. The totals in some categories have fallen because countries have corrected their inventories.

Table 2. Mammalian species – number of reported local breeds

Species	Africa	Asia	Europe & the Caucasus	Latin America & the Caribbean	Near & Middle East	North America	Southwest Pacific	World
Ass	20	39	48	23	15	5	3	153
Bactrian camel	0	8	3	0	0	0	0	11
Buffalo	2	90	12	11	8	0	2	125
Cattle	172	241	351	148	43	17	32	1004
Dromedary	46	13	1	0	23	0	2	85
Goat	96	182	200	28	33	7	11	557
Guinea pig	4	0	0	12	0	0	0	16
Horse	38	138	306	76	14	22	24	618
Pig	51	211	197	68	1	13	15	556
Rabbit	11	16	175	17	5	0	0	224
Sheep	114	259	567	52	52	24	38	1106
Yak	0	25	2	0	0	0	0	27
Total	554	1222	1862	435	194	88	127	4482

Note :Excludes extinct breeds. Not shown: alpaca, deer, dog, dromedary × Bactrian camel, guanaco, llama, vicuña.

Table 3. Avian species – number of reported local breeds

Species	Africa	Asia	Europe & the Caucasus	Latin America & the Caribbean	Near & Middle East	North America	Southwest Pacific	World
Chicken	126	274	702	87	35	15	30	1269
Duck	14	80	88	22	4	1	11	220
Goose	10	40	110	5	2	0	2	169
Muscovy duck	5	9	6	1	1	0	2	24
Ostrich	6	2	4	0	0	0	1	13
Partridge	2	8	3	0	0	0	0	13
Pheasant	0	7	5	6	0	0	0	18
Pigeon	7	12	33	7	8	1	2	70
Turkey	11	11	36	11	3	11	5	88
Total	181	443	987	139	53	28	53	1884

Note: Excludes extinct breeds. Not shown: cassowary, Chilean tinamou, duck × Muscovy duck, emu, guinea fowl, ñandu, peacock, quail, swallow.

Tables 4 and 5, respectively, show the number of reported regional transboundary breeds of mammalian and avian species in each region of the world. For several mammalian species, including sheep, horses and pigs, Europe and the Caucasus, has the highest number of regional transboundary breeds. Africa has a relatively large share of regional transboundary breeds in most of these species. Moreover, Africa has more regional transboundary breeds of cattle and goats than any other region. Europe and the Caucasus, however, has by far the highest number of regional transboundary breeds among avian species.

The existence of significant numbers of regional transboundary breeds clearly has implications for management and conservation of animal genetic resources, and highlights the need for cooperation at regional or subregional levels.

Table 4. Mammalian species – number of reported regional transboundary breeds

Species	Africa	Asia	Europe & the Caucasus	Latin America & the Caribbean	Near & Middle East	North America	Southwest Pacific	World
Ass	3	3	1	1	0	0	0	8
Buffalo	0	8	1	1	0	0	0	10
Cattle	36	20	32	6	1	3	1	99
Deer	0	1	1	0	0	0	0	2
Dromedary	1	1	0	0	0	0	0	2
Goat	15	11	13	2	0	5	1	47
Guinea pig	0	0	0	1	0	0	0	1
Horse	7	10	37	4	0	4	0	62
Pig	2	2	17	5	0	2	0	28
Rabbit	3	0	32	1	0	0	0	36
Sheep	24	13	76	3	3	6	3	128
South American camelids	0	0	0	3	0	0	0	3
Total	91	69	210	27	4	20	5	426

Note: Excluding extinct breeds.

Table 5. Avian species – number of reported regional transboundary breeds

Species	Africa	Asia	Europe & the Caucasus	Latin America & the Caribbean	Near & Middle East	North America	Southwest Pacific	World
Chicken	3	3	42	0	0	0	0	48
Duck	0	2	12	0	0	0	0	14
Goose	0	1	7	0	0	0	0	8
Quail	0	1	0	0	0	0	0	1
Turkey	0	0	7	0	0	0	0	7
Total	3	7	68	0	0	0	0	78

Note: Excluding extinct breeds.

Tables 6 and 7, respectively, show the numbers of reported international transboundary mammalian and avian breeds. Cattle, sheep, horses and chickens are the species that have the highest numbers of international transboundary breeds.

Table 6. Mammalian species – number of reported international transboundary breeds

Species	Number of breeds
Alpaca	2
Ass	5
Bactrian camel	2
Buffalo	5
Cattle	107
Deer	10
Dromedary	2
Goat	38
Horse	63
Pig	30
Rabbit	23
Sheep	101
Total	388

Note: Excluding extinct breeds.

Table 7. Avian species – number of reported international transboundary breeds

Species	Number of breeds
Cassowary	1
Chicken	106
Duck	12
Emu	1
Goose	15
Guinea fowl	5
Muscovy duck	1
Ostrich	3
Pigeon	1
Turkey	16
Total	161

Note: Excluding extinct breeds.

IV. RISK STATUS OF ANIMAL GENETIC RESOURCES

A total of 1 881 breeds (22 percent) are classified as being at risk (compared to 1 710 in 2010 and 1 649 in 2008). Figure 4 shows that for mammalian species, the proportion of breeds classified as at risk is lower overall (20 percent) than for avian species (31 percent). However, in absolute terms, the number of breeds at risk is higher for mammalian species (1 154 breeds) than for avian species (727 breeds). Figure 5 presents risk status data for mammalian species. It can be seen that cattle are the mammalian species with the highest number of breeds at risk. However, rabbits (40 percent) followed by horses (24 percent) and pigs (23 percent) are the species that have the highest proportions of breeds at risk. Figure 5 also shows the large number of breeds for which no risk-status data are available. The problem is particularly significant in some species – 68 percent for deer breeds, 58 percent for asses and 58 percent for dromedaries. This lack of data is a serious constraint to effective prioritization and planning of breed conservation measures. Cattle are the species with the highest number of breeds (182) reported as extinct. Large numbers of extinct breeds of sheep (159), pig (109) and horse (88) are also reported. There is, however, clearly a possibility that there were breeds that became extinct before they were documented, and which are therefore missing from the analysis.

Among avian species, chickens have by far the highest number of breeds at risk on a world scale (Figure 6). In the majority of avian species at least 24 percent of breeds are classified as at risk (guinea fowl and partridge are the only exceptions). In the case of chickens (32 percent), geese (37 percent), turkeys (34 percent), quail (31 percent), pigeons (37 percent) and ostrich (44 percent) the proportion is substantially higher. As in the case of mammalian species, there are a large number of breeds for which population figures are unavailable. Extinct breeds have mainly been reported among chickens. There are also a few cases among ducks, guinea fowl and turkeys. Figures 7 and 8 show the distribution of breeds at risk by region for mammalian and avian species, respectively.

The regions with the highest proportion of their breeds classified as at risk are North America (37 percent of mammalian breeds and 81 percent of avian breeds) and Europe and the Caucasus (34 percent of mammalian breeds and 51 percent of avian breeds). Europe and the Caucasus, and North America are the regions that have the most highly specialized livestock industries, in which production is dominated by a small number of breeds. In absolute terms, Europe and the Caucasus has by far the highest number of at-risk breeds. Despite the apparent dominance of these two regions, problems in other regions may be obscured by the large number of breeds with unknown risk status. In Latin America and the Caribbean, 69 percent of mammalian breeds and 83 percent of avian breeds, are classified as being of unknown risk status; the respective figures for the Southwest Pacific region are 64 percent for mammals and 79 percent for birds, and for Africa 57 percent for mammals and 59 percent for birds.

Figure 4. Proportion of the world’s breeds by risk status category

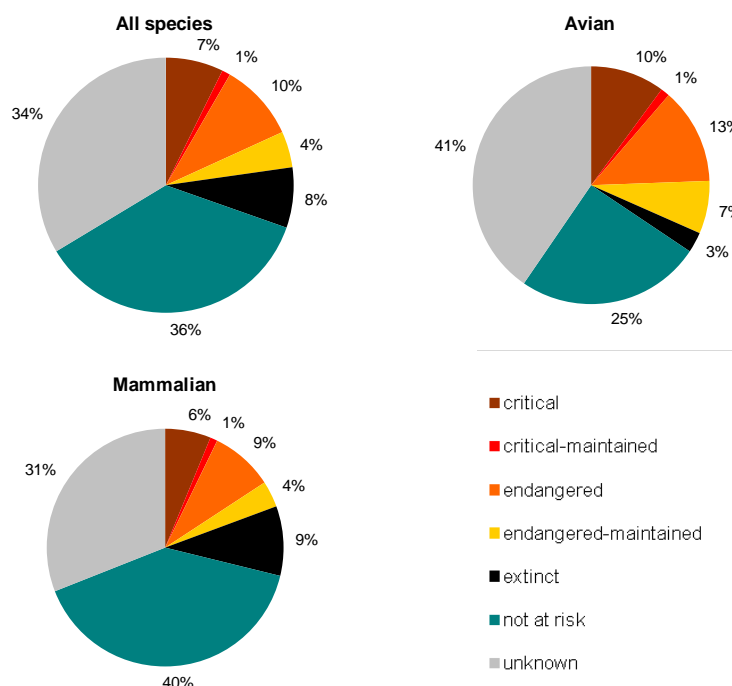
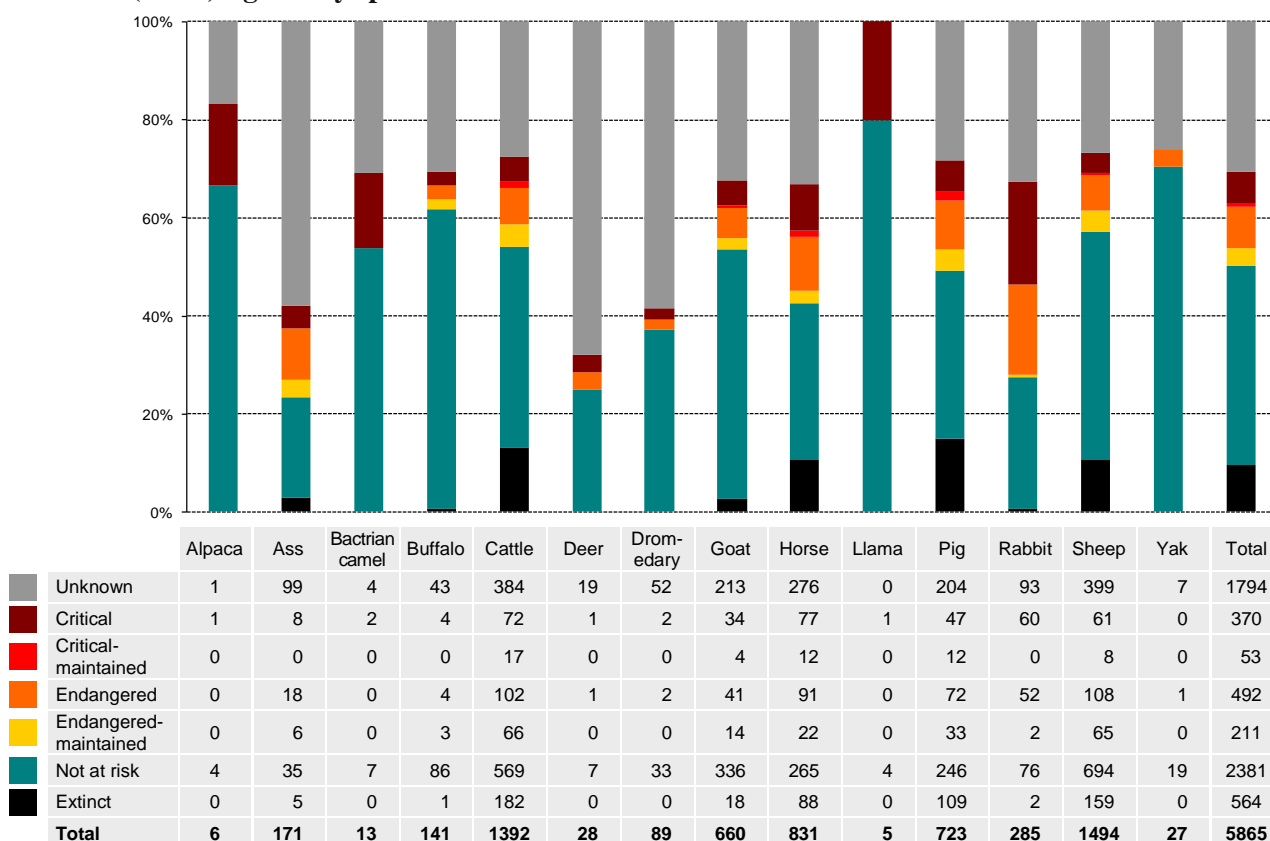
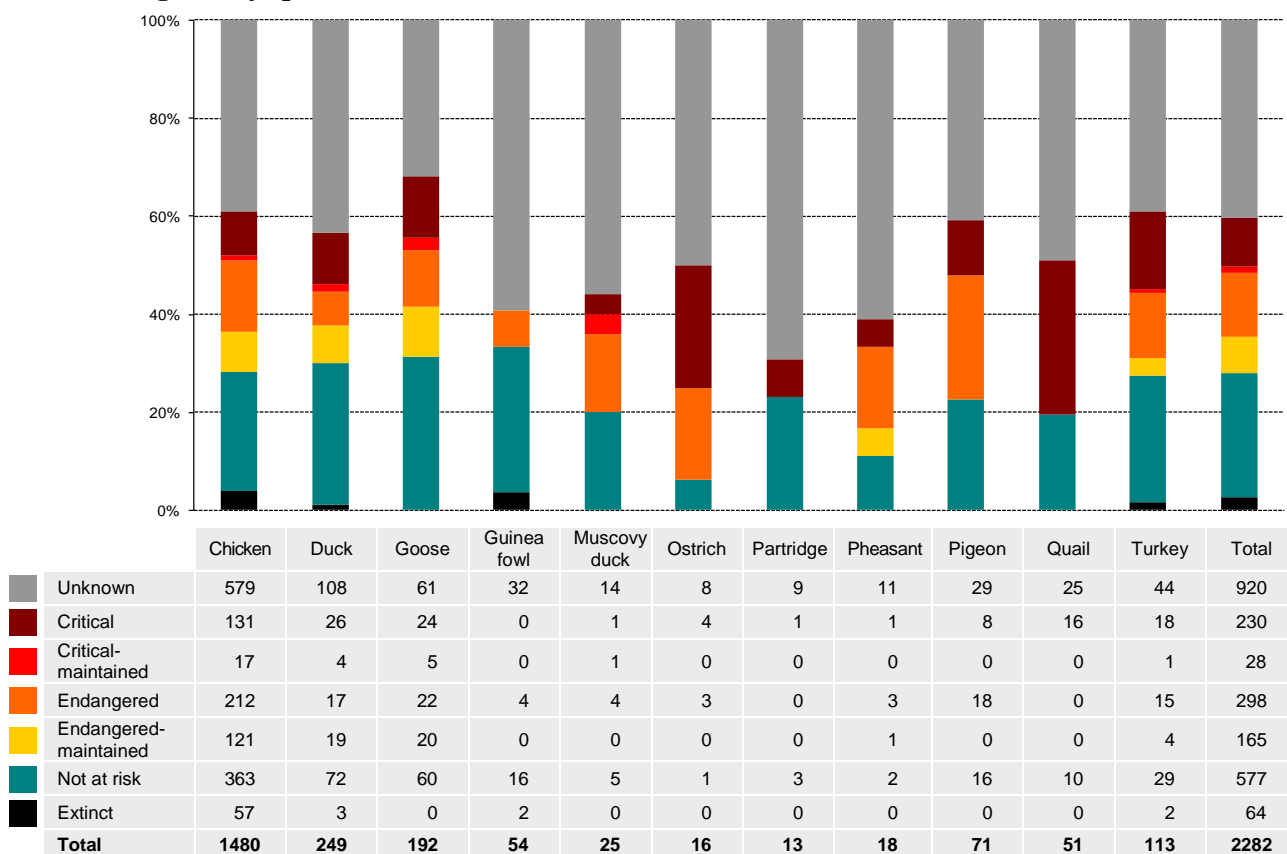


Figure 5. Risk status of the world’s mammalian breeds in June 2012 absolute (table) and percentage (chart) figures by species



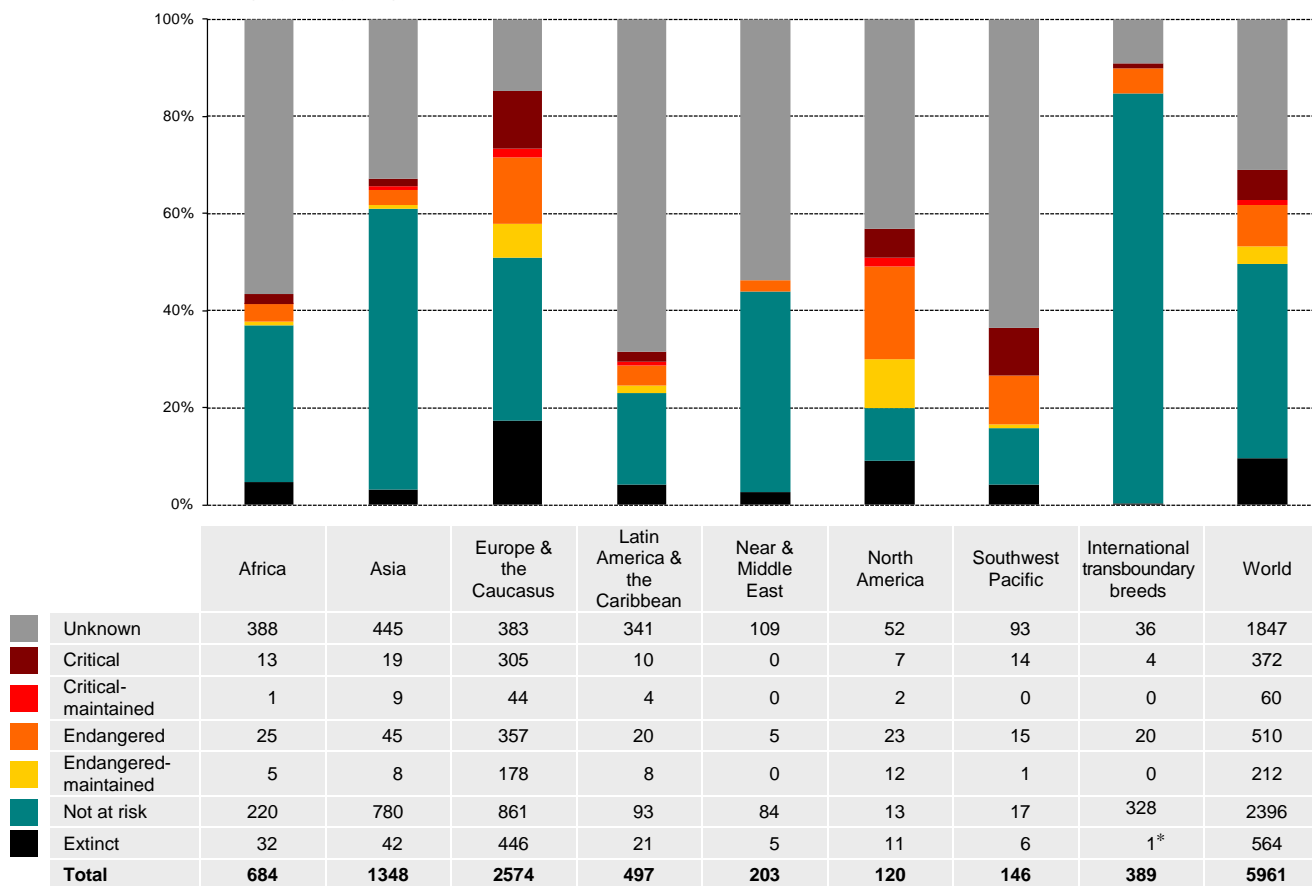
* The total number of breeds is actually higher than the number shown, as Bactrian camel × dromedary crosses, guanacos, vicuñas, guinea pigs and dogs (of which there are a total of 96 reported breeds) are not included.

Figure 6. Risk status of the world’s avian breeds in June 2012: absolute (table) and percentage (chart) figures by species



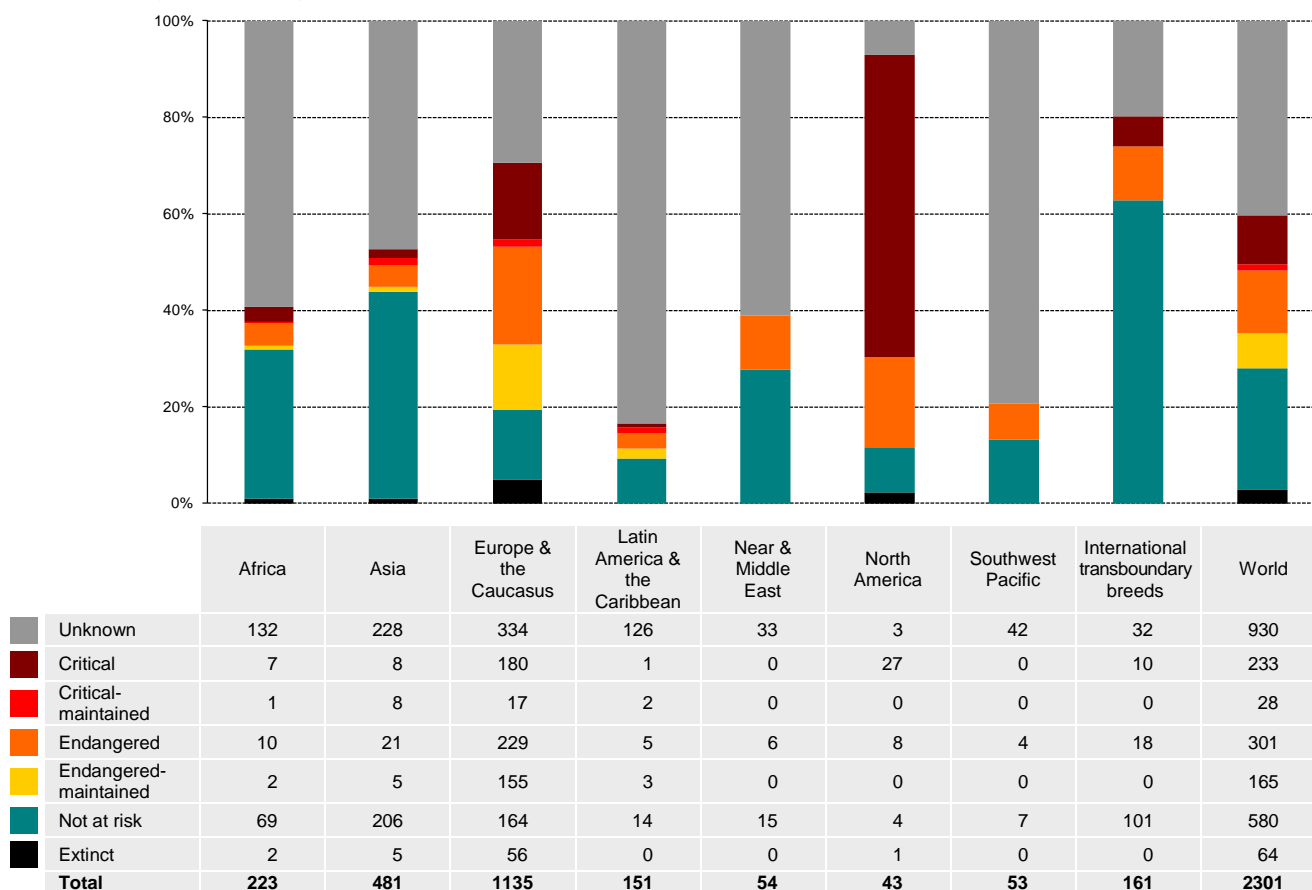
* The total number of breeds is actually higher than the number shown, as duck × Muscovy duck crossings, Chilean tinamou, cassowaries, emus, ñandus, peacocks and swallows (of which there are a total of 19 reported breeds) are not included.

Figure 7. Risk status of the world’s mammalian breeds in June 2012: absolute (table) and percentage (chart) figures by region



*African Aurochs, which once lived in parts of both the Africa and the Near and Middle East regions.

Figure 8. Risk status of the world’s avian breeds June 2012: absolute (table) and percentage (chart) figures by region



Tables 8 and 9 present the number of extinct mammalian and avian breeds by species and region. Europe and the Caucasus has by far the largest number of extinct mammalian and avian breeds – 14 percent of all reported breeds are extinct. The dominance of Europe and the Caucasus in terms of the numbers of extinct breeds, may relate to the greater levels of breed recording that have taken place in this region. The year of extinction has been reported for only 29 percent (185) of extinct breeds. Seven breeds are reported to have become extinct before the year 1900, 102 between 1900 and 1999, and 76 after 1999 (Table 10).

Table 8. Number of extinct mammalian breeds

Species	Africa	Asia	Europe & the Caucasus	Latin America & the Caribbean	Near & Middle East	North America	South-west Pacific	International transboundary breeds	World
Ass	1	0	3	0	1	0	0	0	5
Buffalo	0	0	1	0	0	0	0	0	1
Cattle	20	18	120	19	1	1	2	1	182
Goat	0	2	15	0	0	1	0	0	18
Horse	6	1	72	0	0	8	1	0	88
Pig	0	15	91	2	0	0	1	0	109
Rabbit	0	0	0	0	2	0	0	0	2
Sheep	5	6	144	0	1	1	2	0	159
Total	32	42	445	21	5	11	6	1	564

Table 9. Number of extinct avian breeds

Species	Africa	Asia	Europe & the Caucasus	Latin America & the Caribbean	Near & Middle East	North America	Southwest Pacific	World
Chicken	0	5	51	0	0	1	0	57
Duck	0	0	3	0	0	0	0	3
Guinea fowl	2	0	0	0	0	0	0	2
Turkey	0	0	2	0	0	0	0	2
Total	2	5	56	0	0	1	0	64

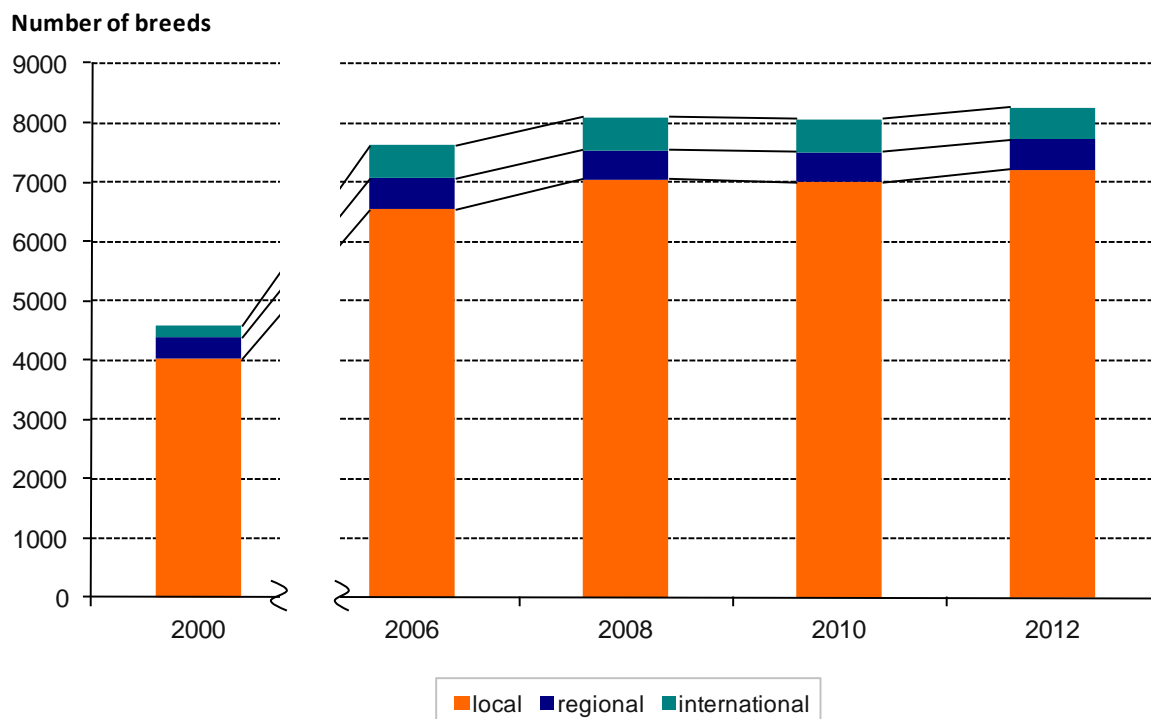
Table 10. Years of extinction

Year	Number of breeds	%
Unspecified	443	71
Before 1900	7	1
1900-1999	102	16
After 1999	76	12
Total	628	100

V. TRENDS IN BREED STATUS

Between October 2010 and June 2012, the shares of international transboundary, regional transboundary and local breeds in the total number of reported breeds remained steady at 7 percent, 6 percent and 87 percent respectively (Figure 9).

Figure 9. Local, regional and international breeds – 2000 to 2012



VI. TRENDS IN GENETIC EROSION

Between 2010 and 2012 the proportion of transboundary breeds classified as at risk and extinct remained steady at 16 percent and 1 percent respectively (Figure 10). The proportion of transboundary breeds classified as not at risk remained at 69 percent, while the proportion classified as being of unknown risk status decreased from 15 percent to 14 percent.

Between 2010 and 2012, the number of local breeds categorized as at risk increased from 22 percent to 24 percent (Figure 11). The absolute number of local breeds categorized as at risk increased from 1 543 to 1 711. This increase is largely caused by an increase in the number of at-risk breeds reported in the Europe and the Caucasus region (Figures 7 and 8). The proportion of local breeds categorized as not at risk remained the same (31 percent). The proportion classified as being of unknown risk status declined from 38 percent to 36 percent, reflecting the improvement in the state of reporting.

Figure 10. Changes in risk status of transboundary breeds from 2000 to 2012

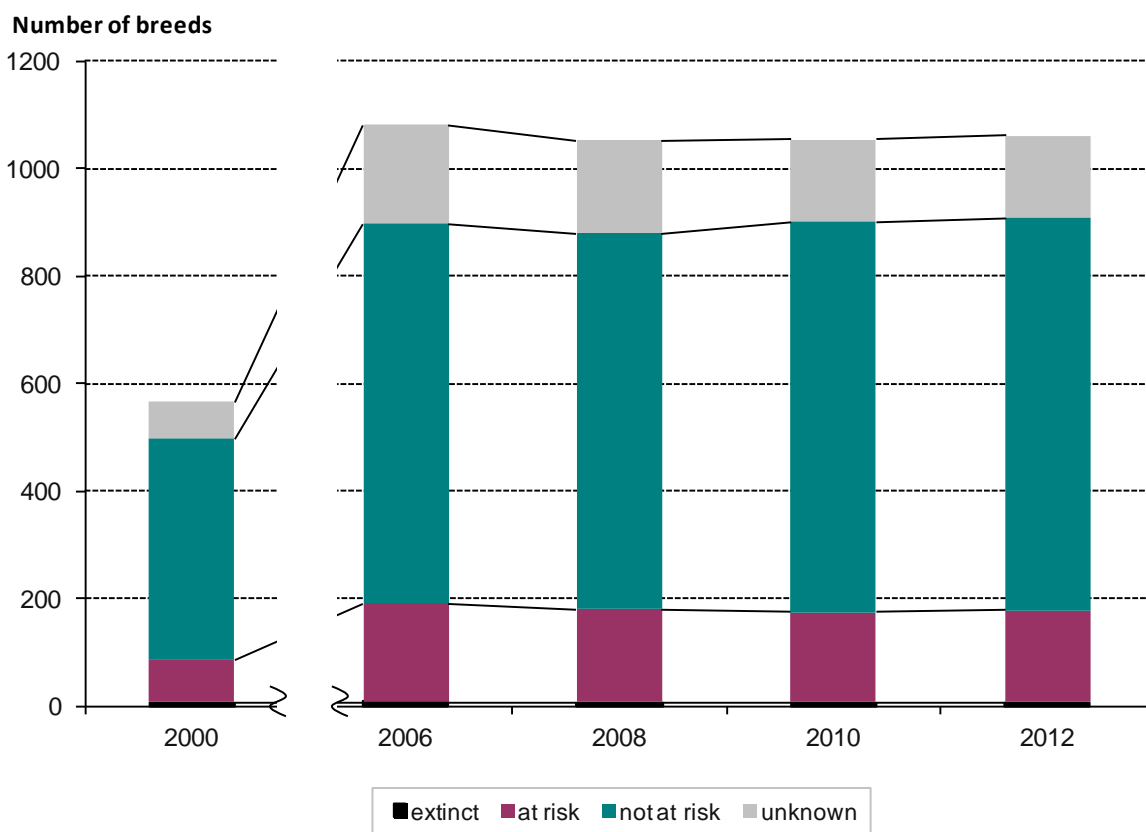
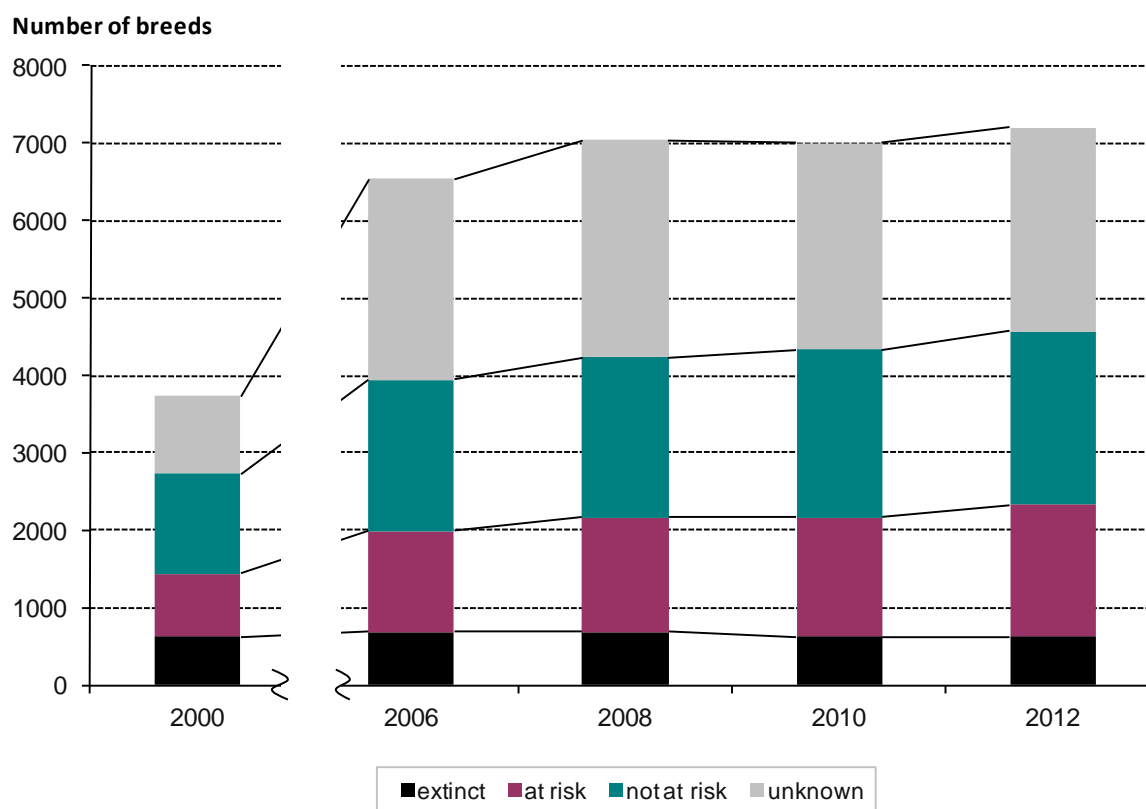


Figure 11. Changes in the risk status of local breeds from 2000 to 2012



VII. CONCLUSIONS

During the period between October 2010 and June 2012 the coverage of the Global Databank for Animal Genetic Resources has improved. However, breed-related information remains far from complete. For more than one-third of all reported breeds, risk status is not known because of missing population data. The completeness of data is shown, by country, in Annexes 1 and 2.

Global summaries of breed risk status continue to be affected by corrections to breed inventories. Proposals for reducing the confounding effects of such changes are included in the document *Targets and indicators for animal genetic resources*⁴.

The current state of data availability and updating means that it is not possible to draw reliable conclusions regarding global trends in breed risk status. If future status and trends reports in this series are to provide meaningful inputs to decision-making in animal genetic resources management, there is an urgent need for National Coordinators for the Management of Animal Genetic Resources to improve the completeness and frequency of reporting on the sizes of their national breed populations. Historical data should also be entered, as this will provide a more complete set of data with which to calculate trends in breed population size and structure. Reviewing the linkages of national breed populations to transboundary breeds is also very important, as this affects the analysis of risk status at national, regional and global levels.

⁴ CGRFA/WG-AnGR-7/12/7 (<http://www.fao.org/docrep/meeting/026/me514e.pdf>).

Annex 1

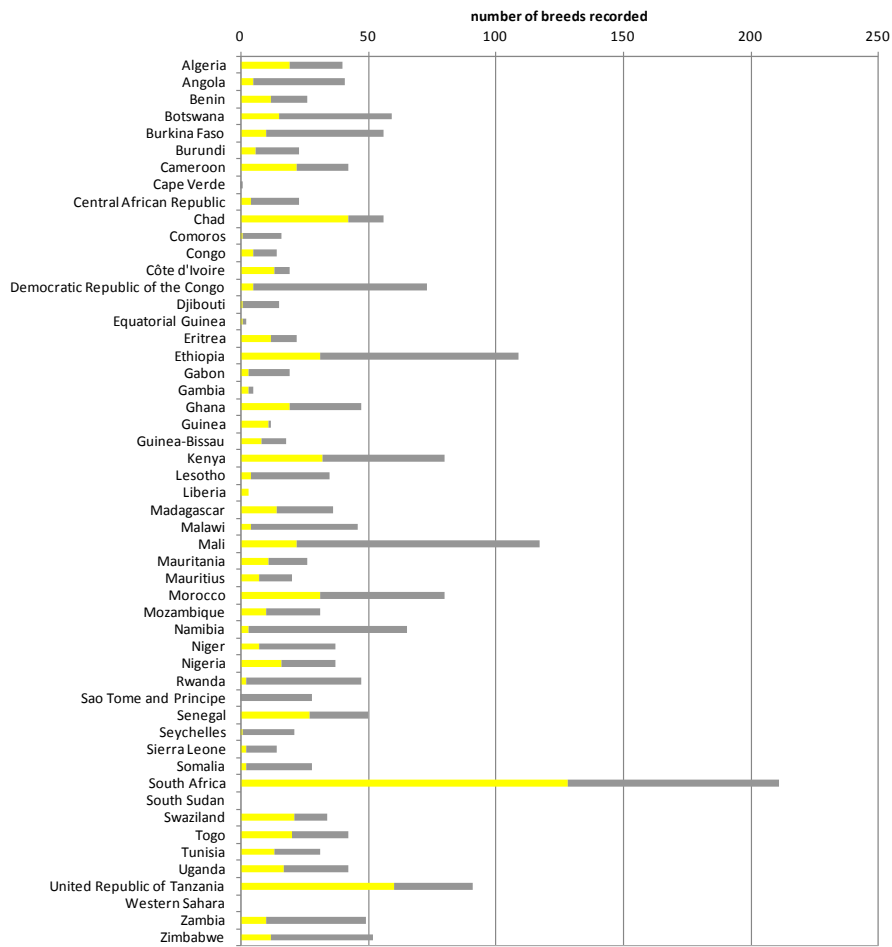
Status of population data reported by each country and region

- 1.1. Africa
- 1.2. Asia
- 1.3. Europe and the Caucasus
- 1.4. Latin America and the Caribbean
- 1.5. Near and Middle East
- 1.6. North America
- 1.7. Southwest Pacific

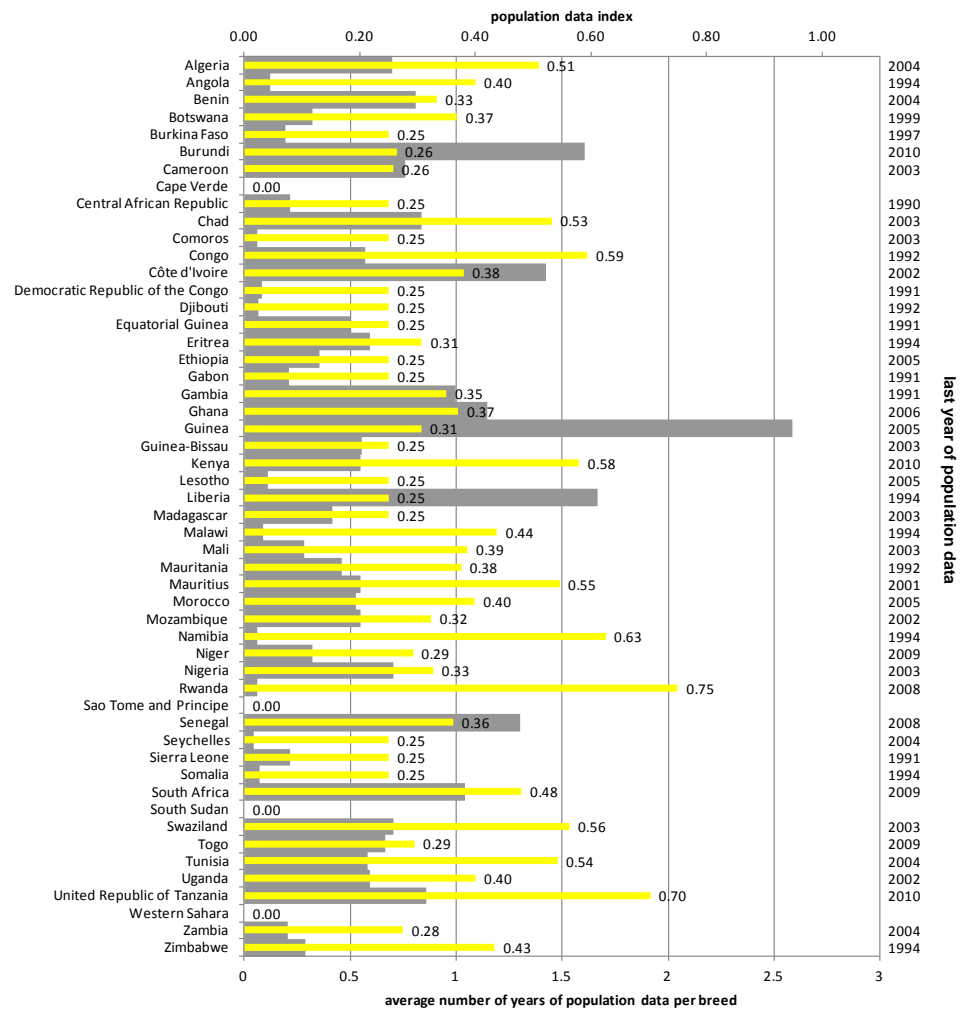
This annex allows countries to view the state of completeness of their breed population data in DAD-IS. They can also see how their progress in entering population data compares to that of other countries in their respective regions.

Two graphics are presented for each region. The first shows the number of breeds for which population data have been recorded and the number of breeds that have been entered into DAD-IS but for which no population data have yet been recorded. The second graphic presents two further measures of data completeness: the average number of years for which population has been reported per breed and the “population data index”. The latter relates only to breeds for which some population data have been entered – it represents the fraction of selected population data fields (population size, number of breeding females, number of breeding males and the percentage of females bred to males of the same breed) that contain data, averaged across breeds and years. The figures also show the most recent year for which population data are available from a given country. Dependent territories are listed below the respective country.

1.1 Africa



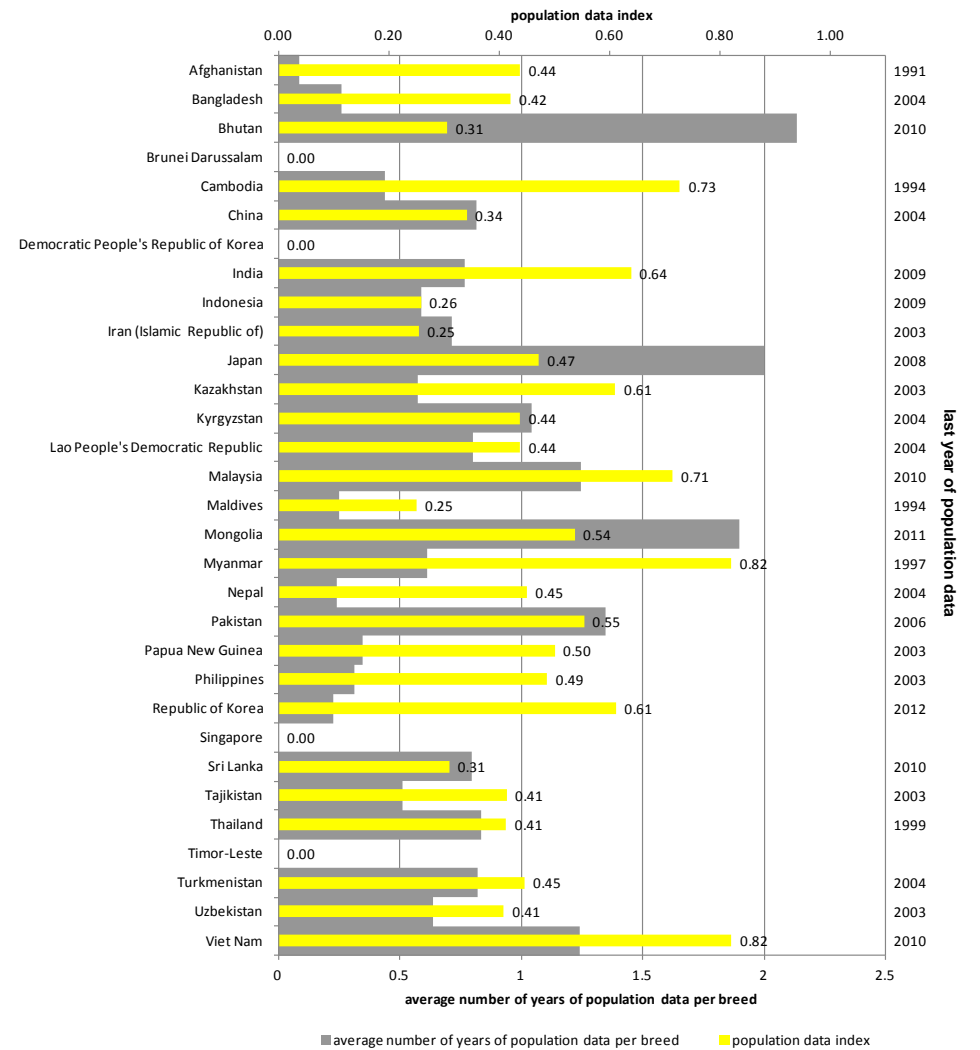
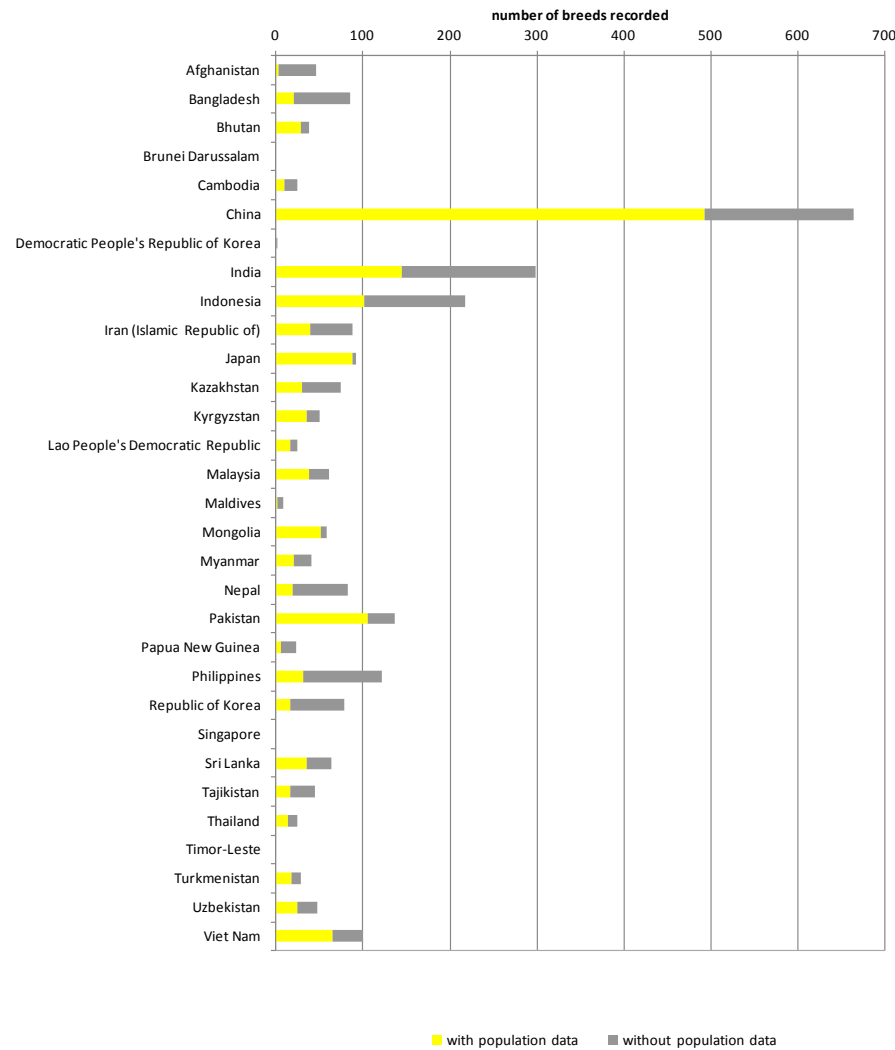
■ with population data ■ without population data



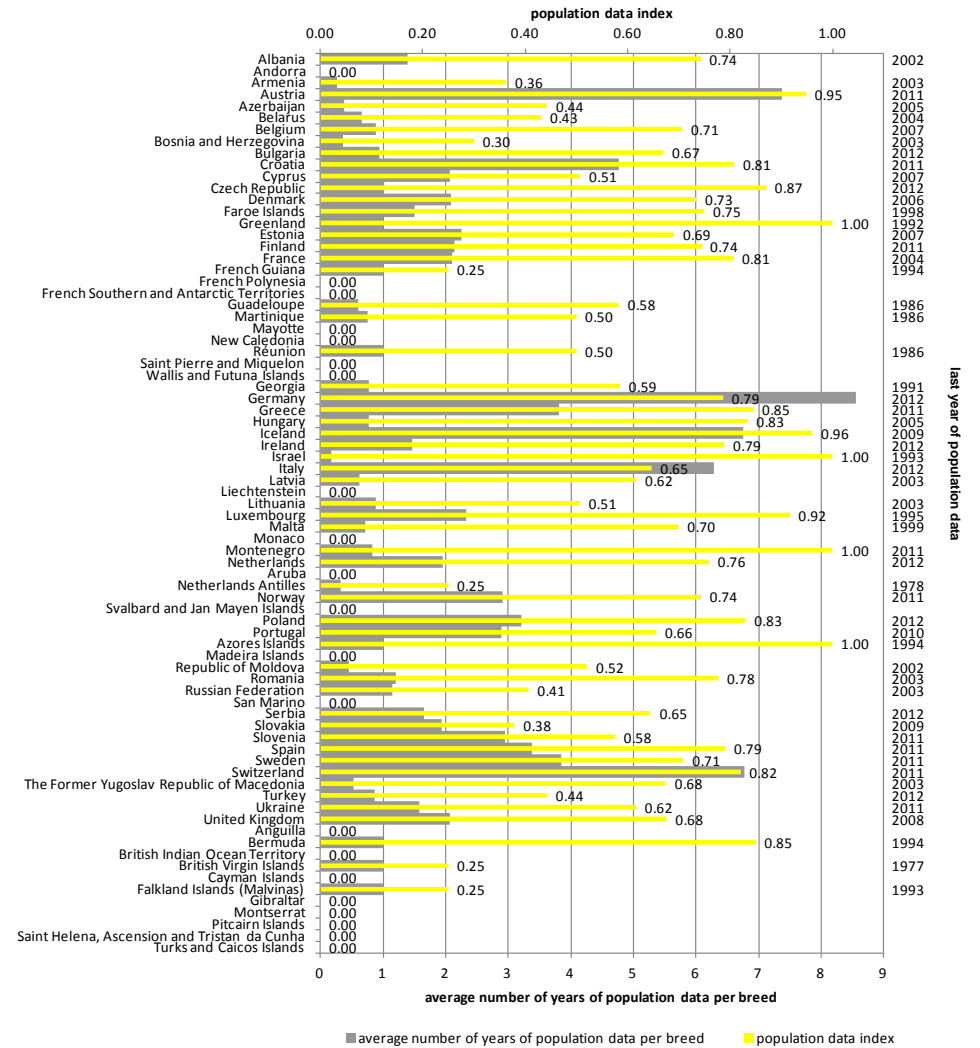
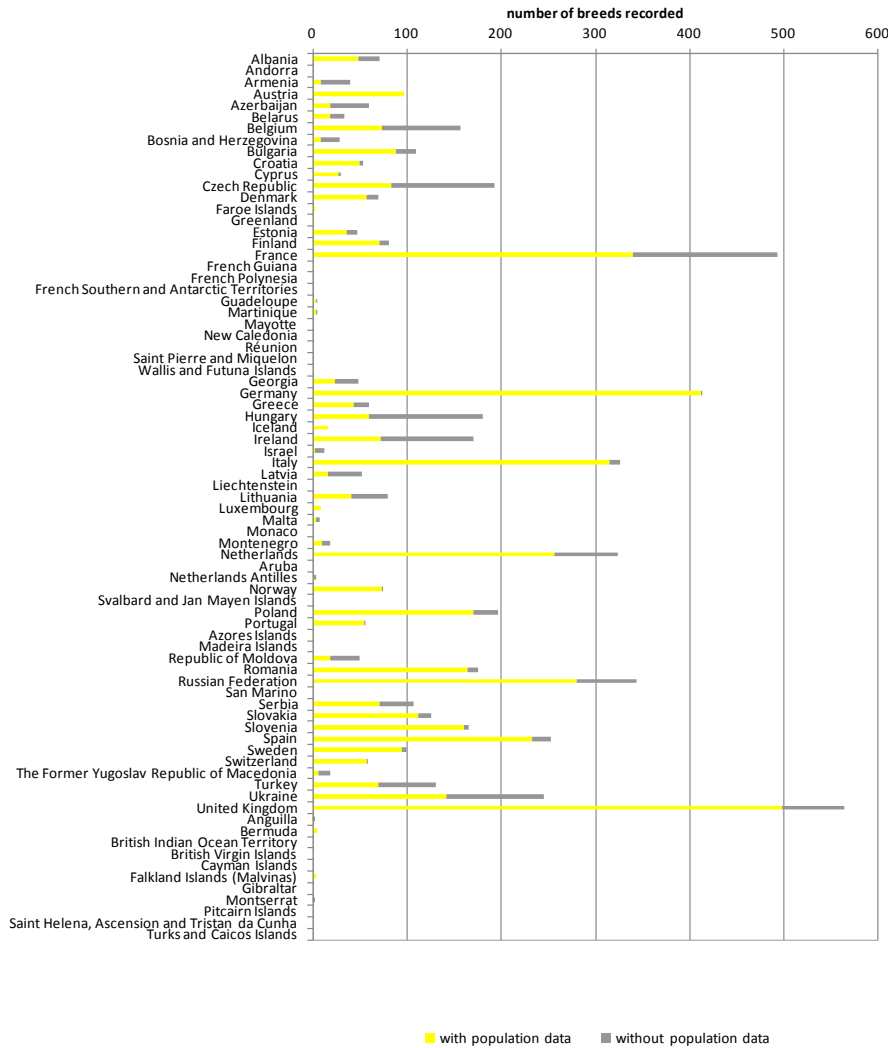
■ average number of years of population data per breed ■ population data index

last year of population data

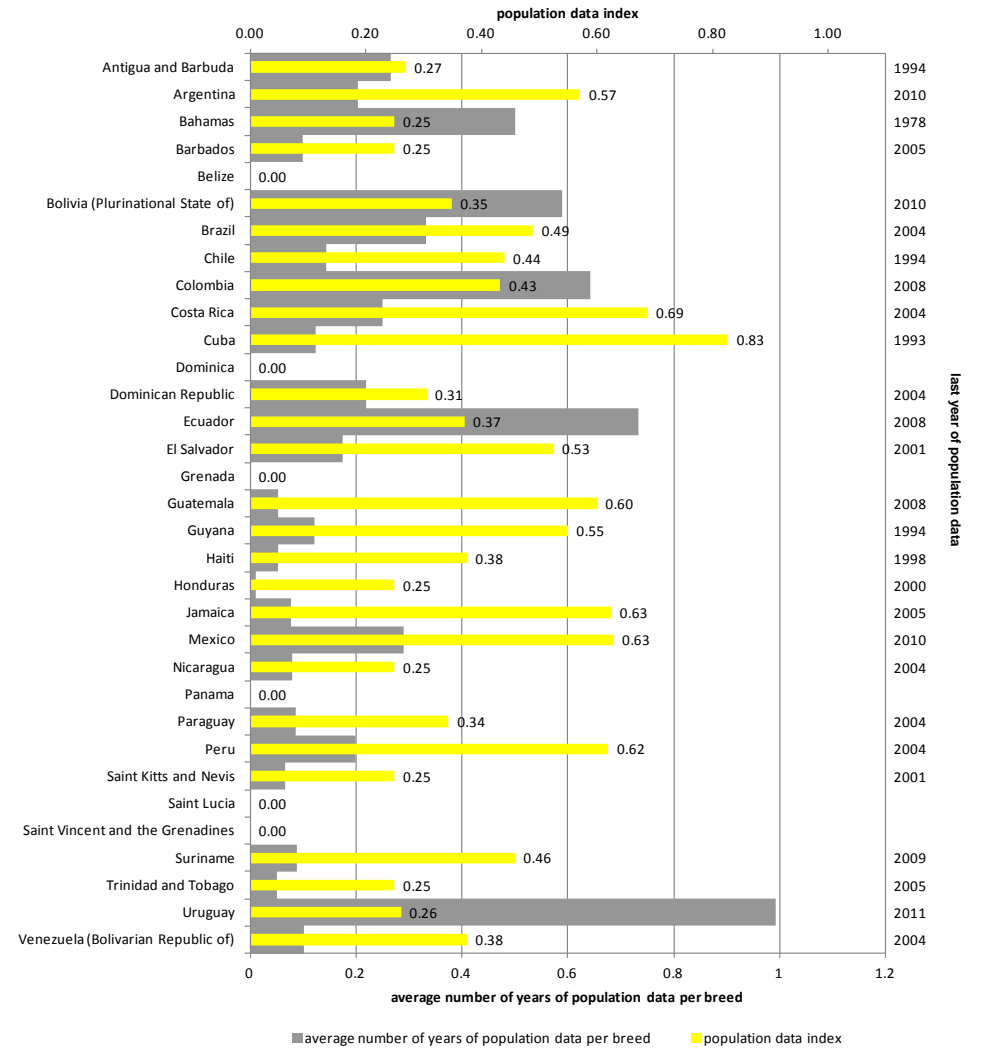
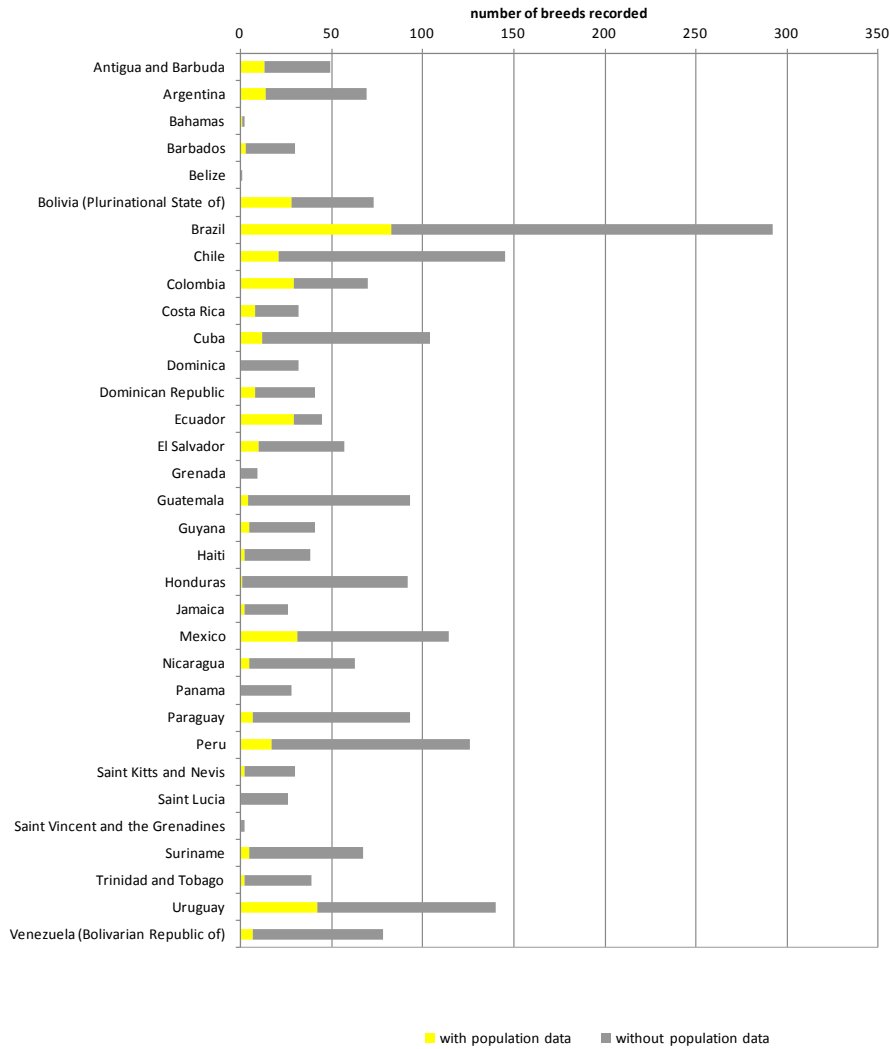
1.2 Asia



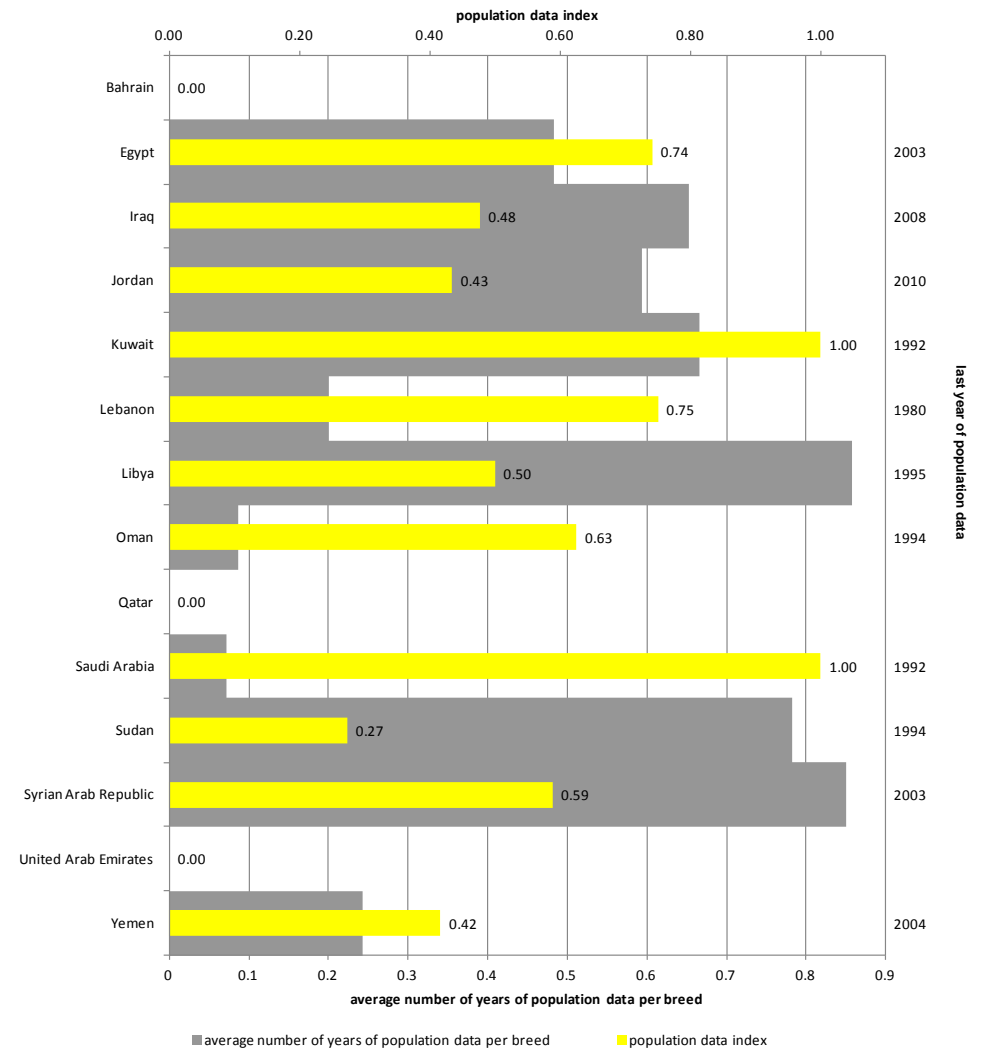
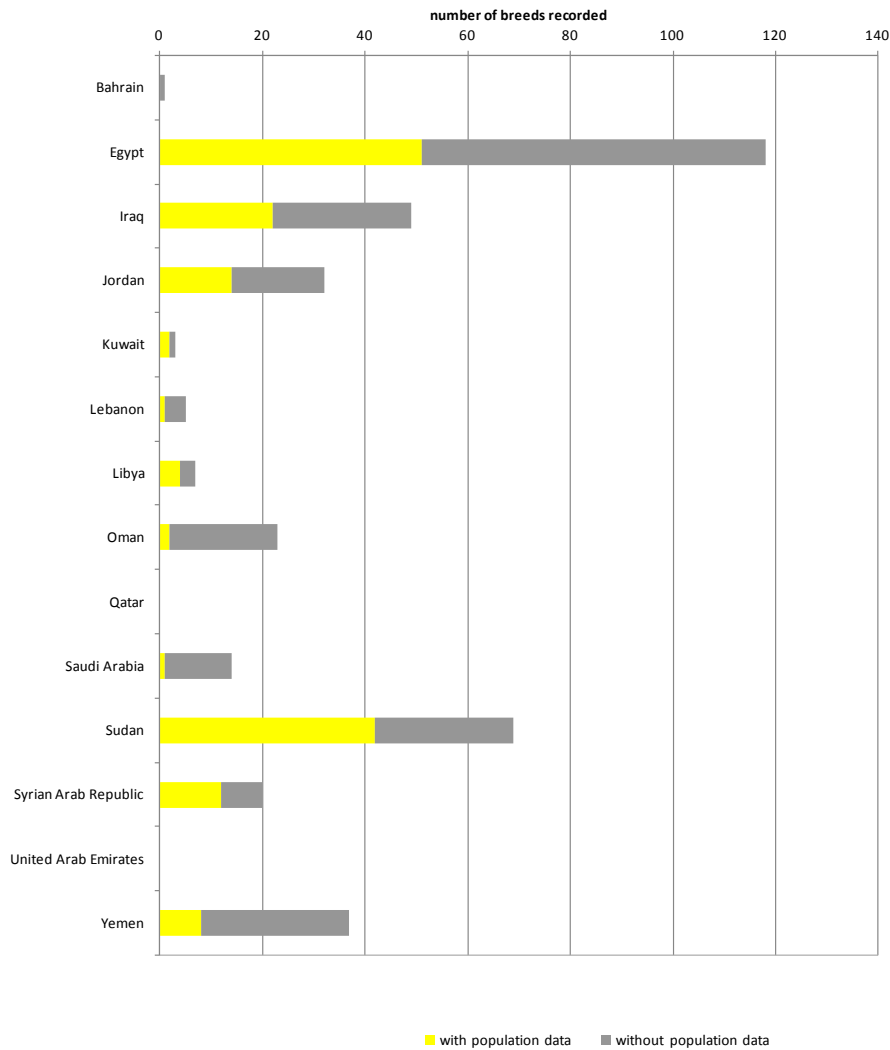
1.3 Europe and the Caucasus



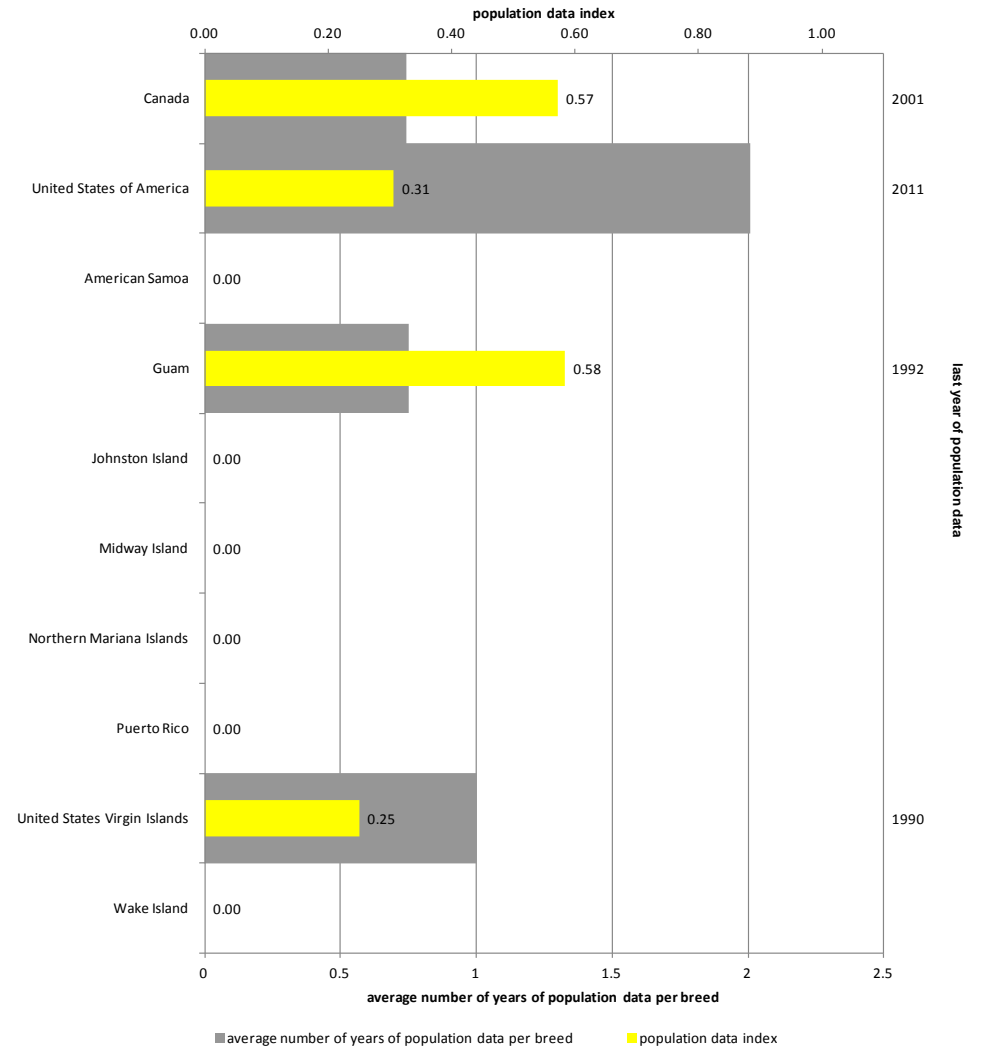
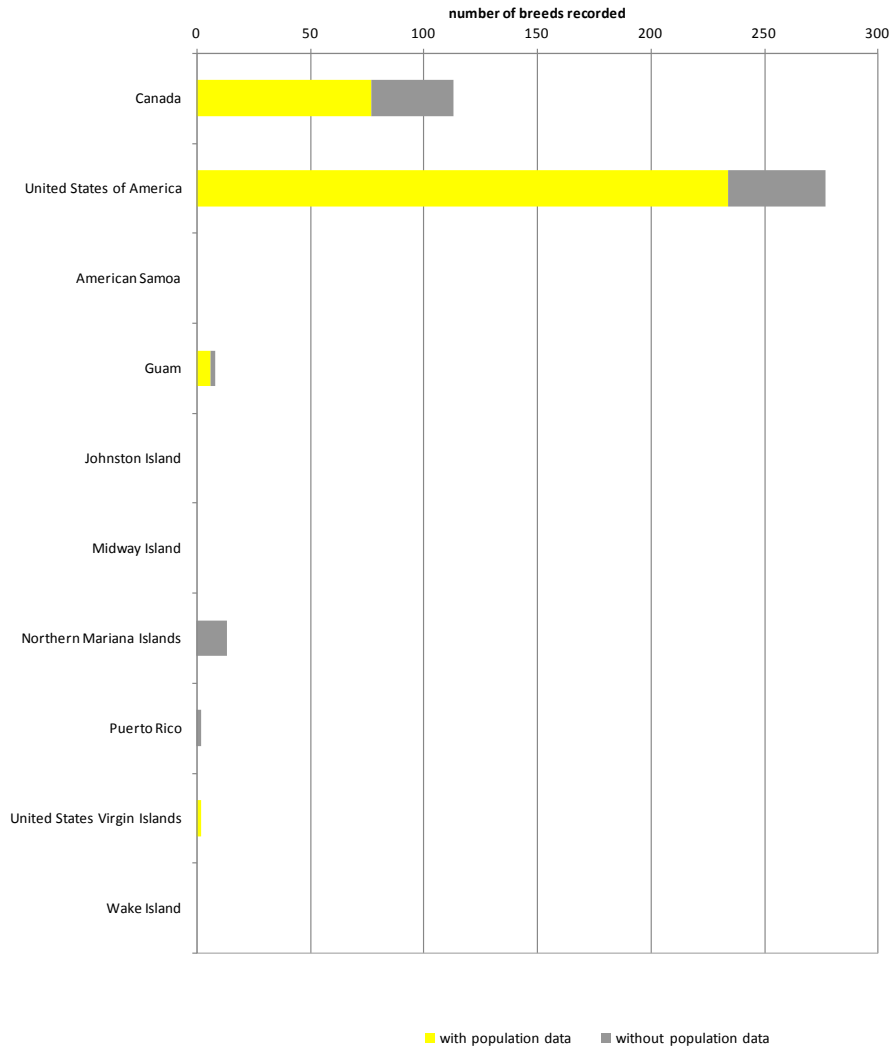
1.4 Latin America and the Caribbean



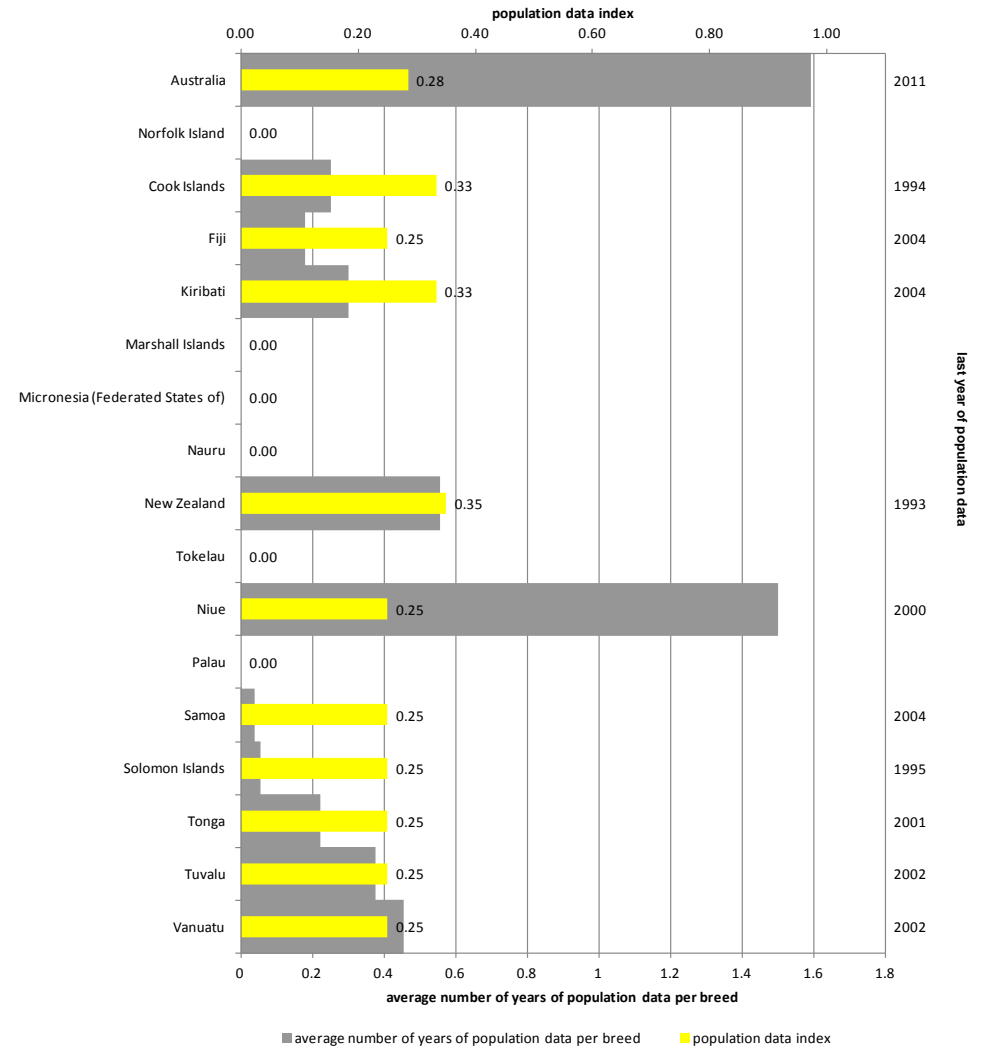
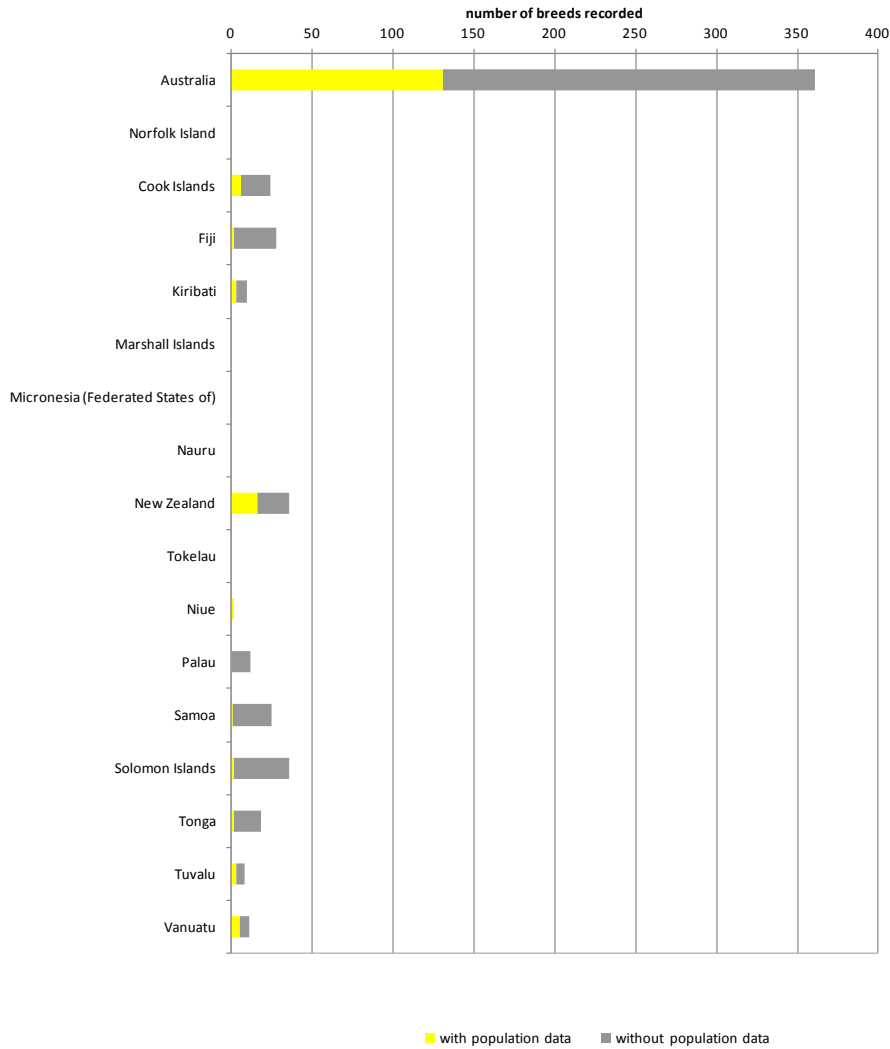
1.5 Near and Middle East



1.6 North America



1.7 Southwest Pacific



Annex 2

Number of local and transboundary breeds by risk status category reported by each country and region

- 2.0. Regional overview
- 2.1. Africa
- 2.2. Asia
- 2.3. Europe and the Caucasus
- 2.4. Latin America and the Caribbean
- 2.5. Near and Middle East
- 2.6. North America
- 2.7. Southwest Pacific

The tables in this annex show the number of local, regional transboundary and international transboundary breeds and their respective risk status by region and by country. Dependent territories are listed below the respective country. The tables will help countries to identify need for action in surveying and conservation.

2.0 Regional Overview	Local			Regional			International			Total
Region	at risk	not at risk	un-known	at risk	not at risk	un-known	at risk	not at risk	un-known	
Africa	60	223	493	4	64	25	8	262	42	1181
Asia	118	932	656	5	54	17	16	309	38	2145
Europe and the Caucasus	1370	866	693	95	159	24	45	339	34	3625
Latin America and the Caribbean	52	92	456	1	15	11	17	269	31	944
Near and Middle East	11	98	142	0	3	2	0	65	11	332
North America	68	12	50	11	5	4	20	159	4	333
Southwest Pacific	32	21	136	2	3	0	24	255	17	490
World	1711	2244	2626	118	303	83	52	429	68	7634

2.1 Africa	Local			Regional			International			Total
Country	at risk	not at risk	un-known	at risk	not at risk	un-known	at risk	not at risk	un-known	
Algeria	0	4	12	0	7	1	1	8	0	33
Angola	0	4	14	1	2	0	0	19	0	40
Benin	0	3	7	0	6	1	0	7	1	25
Botswana	1	3	5	1	4	1	0	41	2	58
Burkina Faso	1	4	17	0	9	1	0	20	3	55
Burundi	0	4	3	0	0	0	0	14	2	23
Cameroon	0	11	10	0	8	1	0	8	0	38
Cape Verde	0	0	0	0	0	0	0	1	0	1
Central African Republic	0	0	9	0	5	1	0	7	1	23
Chad	13	18	4	0	7	4	0	8	1	55
Comoros	0	1	6	0	1	0	0	8	0	16
Congo	0	0	3	0	2	0	1	7	1	14
Côte d'Ivoire	0	4	6	0	6	0	0	3	0	19
Democratic Republic of the Congo	0	2	22	0	4	1	0	42	2	73
Djibouti	0	0	9	0	3	0	0	1	1	14
Equatorial Guinea	0	0	0	0	1	0	0	1	0	2
Eritrea	0	2	4	1	8	2	0	4	1	22
Ethiopia	0	17	50	1	12	3	0	21	3	107

2.1 Africa	Local			Regional			International			Total
Country	at risk	not at risk	un-known	at risk	not at risk	un-known	at risk	not at risk	un-known	
Gabon	0	0	4	0	3	0	1	10	1	19
Gambia	0	0	0	0	1	0	0	3	0	4
Ghana	2	8	10	0	7	0	0	16	3	46
Guinea	0	5	1	0	2	0	0	3	0	11
Guinea-Bissau	0	3	1	0	2	0	0	12	0	18
Kenya	0	14	12	0	7	3	0	42	2	80
Lesotho	0	2	7	0	1	0	0	23	1	34
Liberia	0	0	0	0	2	0	0	1	0	3
Madagascar	4	8	5	0	0	0	0	14	3	34
Malawi	0	2	11	0	2	0	0	26	2	43
Mali	0	7	50	0	14	5	0	32	4	112
Mauritania	0	3	3	0	7	4	0	9	0	26
Mauritius	0	1	4	0	0	1	0	14	0	20
Morocco	0	14	28	0	3	1	0	30	3	79
Mozambique	1	5	6	0	4	0	0	14	0	30
Namibia	1	0	17	1	4	0	0	41	1	65
Niger	0	2	21	0	8	1	0	5	0	37
Nigeria	0	1	13	0	14	3	0	4	0	35
Rwanda	1	0	11	0	0	1	0	32	0	45
Sao Tome and Principe	0	0	6	0	0	1	0	20	1	28
Senegal	0	8	5	0	7	1	0	23	5	49
Seychelles	0	0	1	0	0	2	0	0	0	3
Sierra Leone	0	0	0	0	1	0	0	13	0	14
Somalia	1	0	17	1	3	1	0	4	1	28
South Africa	25	5	36	2	6	1	3	104	7	189
South Sudan	0	0	0	0	0	0	0	0	0	0
Swaziland	1	11	3	0	4	0	0	15	0	34
Togo	0	6	1	0	7	4	0	17	6	41
Tunisia	0	3	5	0	1	0	0	16	3	28
Uganda	2	5	6	0	6	4	1	18	0	42
United Republic of Tanzania	6	24	16	0	5	4	0	28	1	84
Western Sahara	0	0	0	0	0	0	0	0	0	0
Zambia	0	6	9	0	2	0	1	28	2	48
Zimbabwe	1	3	3	1	4	1	0	34	2	49

2.2 Asia Country	Local			Regional			International			Total
	at risk	not at risk	un-known	at risk	not at risk	un-known	at risk	not at risk	un-known	
Afghanistan	0	0	37	1	3	3	0	2	0	46
Bangladesh	3	7	38	0	6	0	0	22	5	81
Bhutan	1	21	2	0	2	0	0	11	1	38
Brunei Darussalam	0	0	0	0	0	0	0	0	0	0
Cambodia	2	7	7	1	2	2	0	4	0	25
China	28	421	111	0	10	1	4	57	5	637
Democratic People's Republic of Korea	0	0	1	0	0	0	0	0	0	1
India	8	101	114	0	27	6	1	41	0	298
Indonesia	4	51	84	1	4	1	2	48	13	208
Iran (Islamic Republic of)	5	23	31	0	3	1	1	17	4	85
Japan	18	22	8	1	0	0	3	37	0	89
Kazakhstan	3	12	30	0	10	0	0	19	0	74
Kyrgyzstan	1	15	10	1	7	1	1	13	0	49
Lao People's Democratic Republic	2	13	1	1	1	1	0	6	0	25
Malaysia	4	13	6	2	3	1	1	26	4	60
Maldives	0	1	3	0	0	0	0	3	1	8
Mongolia	0	36	4	0	6	0	1	11	0	58
Myanmar	2	16	1	0	1	0	1	20	0	41
Nepal	0	11	22	0	11	3	0	31	3	81
Pakistan	13	71	20	1	11	1	0	18	0	135
Papua New Guinea	1	4	4	0	1	0	0	13	0	23
Philippines	2	13	29	0	2	1	1	64	6	118
Republic of Korea	9	5	20	1	0	0	2	34	3	74
Singapore	0	0	0	0	0	0	0	0	0	0
Sri Lanka	1	10	10	0	7	1	0	34	1	64
Tajikistan	0	6	15	1	9	2	0	10	0	43
Thailand	4	6	8	2	2	1	0	1	0	24
Timor-Leste	0	0	0	0	0	0	0	0	0	0
Turkmenistan	0	3	7	0	5	3	0	6	0	24
Uzbekistan	0	6	15	0	9	3	0	11	1	45
Viet Nam	7	38	18	1	1	3	1	27	1	97

2.3 Europe and the Caucasus	Local			Regional			International			Total
Country	at risk	not at risk	un-known	at risk	not at risk	un-known	at risk	not at risk	un-known	
Albania	7	29	6	0	2	1	0	23	1	69
Andorra	0	0	0	0	0	0	0	0	0	0
Armenia	1	2	10	2	3	3	0	16	1	38
Austria	16	12	0	3	12	0	0	34	0	77
Azerbaijan	3	1	27	3	4	5	1	8	0	52
Belarus	3	7	5	0	4	0	0	10	0	29
Belgium	27	10	28	5	17	2	1	49	2	141
Bosnia and Herzegovina	1	3	15	0	2	0	0	3	0	24
Bulgaria	41	22	13	2	3	0	1	16	0	98
Croatia	9	15	2	2	4	0	0	14	0	46
Cyprus	3	10	4	0	1	0	0	11	0	29
Czech Republic	16	12	41	18	23	0	2	77	3	192
Denmark	16	4	1	0	5	0	0	40	0	66
Faroe Islands	0	1	0	0	0	0	0	1	0	2
Greenland	0	1	0	0	0	0	0	0	0	1
Estonia	4	6	1	2	3	0	0	29	1	46
Finland	24	9	3	1	4	1	0	39	0	81
France	91	55	132	10	25	0	5	75	2	395
French Guiana	1	0	0	0	0	0	0	0	0	1
French Polynesia	0	0	0	0	0	0	0	0	0	0
French Southern and Antarctic Territories	0	0	0	0	0	0	0	0	0	0
Guadeloupe	0	0	0	0	0	0	0	4	1	5
Martinique	0	0	0	0	0	0	0	3	1	4
Mayotte	0	0	0	0	0	0	0	0	0	0
New Caledonia	0	0	0	0	0	0	0	0	0	0
Réunion	0	0	0	0	0	0	0	1	0	1
Saint Pierre and Miquelon	0	0	0	0	0	0	0	0	0	0
Wallis and Futuna Islands	0	0	0	0	0	0	0	0	0	0
Georgia	2	8	14	7	7	6	0	2	0	46
Germany	152	61	1	18	59	0	5	111	0	407
Greece	13	19	2	0	1	0	0	19	0	54
Hungary	9	7	64	5	13	2	1	60	5	166
Iceland	2	2	0	0	3	0	0	8	0	15
Ireland	16	7	15	11	11	3	11	90	4	168
Israel	0	0	3	0	0	0	1	6	2	12
Italy	141	81	11	0	5	0	1	22	0	261
Latvia	1	2	7	1	8	2	0	28	1	50
Liechtenstein	0	0	0	0	0	0	0	0	0	0
Lithuania	5	8	7	0	14	1	0	35	2	72
Luxembourg	0	0	0	0	1	0	0	8	0	9
Malta	1	1	0	0	1	0	0	4	0	7
Monaco	0	0	0	0	0	0	0	0	0	0
Montenegro	3	5	4	1	1	0	0	4	0	18
Netherlands	75	20	21	19	50	2	5	106	5	303
Aruba	0	0	0	0	0	0	0	0	0	0
Netherlands Antilles	0	0	0	0	0	0	0	2	1	3

2.4 Latin America and the Caribbean	Local			Regional			International			Total
Country	at risk	not at risk	un-known	at risk	not at risk	un-known	at risk	not at risk	un-known	
Antigua and Barbuda	2	2	3	0	0	1	3	36	1	48
Argentina	0	7	14	0	2	0	0	43	2	68
Bahamas	0	0	1	0	0	0	0	1	0	2
Barbados	0	0	6	0	0	0	0	20	3	29
Belize	0	0	1	0	0	0	0	0	0	1
Bolivia (Plurinational State of)	2	7	8	0	6	0	1	47	1	72
Brazil	23	19	76	0	1	2	5	136	12	274
Chile	1	3	43	0	5	0	3	80	5	140
Colombia	2	14	4	1	2	0	0	44	2	69
Costa Rica	0	0	4	0	3	0	0	21	2	30
Cuba	3	5	36	1	1	0	0	49	6	101
Dominica	0	0	3	0	0	0	0	27	1	31
Dominican Republic	3	0	3	0	3	1	0	28	2	40
Ecuador	1	9	9	0	2	0	0	21	0	42
El Salvador	0	2	6	0	2	2	0	41	4	57
Grenada	0	0	0	0	0	0	0	8	1	9
Guatemala	2	1	16	0	4	1	1	62	4	91
Guyana	0	0	10	0	1	1	0	28	0	40
Haiti	0	0	9	0	2	1	0	23	2	37
Honduras	0	1	21	0	2	4	0	60	3	91
Jamaica	1	0	7	0	0	0	0	17	1	26
Mexico	5	8	23	0	4	2	1	68	2	113
Nicaragua	0	1	8	0	3	0	0	46	4	62
Panama	0	0	3	0	2	1	0	21	1	28
Paraguay	1	2	15	0	3	0	0	69	2	92
Peru	0	6	26	0	7	2	1	78	5	125
Saint Kitts and Nevis	2	0	16	0	0	0	0	11	1	30
Saint Lucia	0	0	6	0	0	0	0	18	2	26
Saint Vincent and the Grenadines	0	0	0	0	0	0	0	1	1	2
Suriname	0	0	13	0	1	1	1	48	2	66
Trinidad and Tobago	0	0	4	0	1	0	0	31	3	39
Uruguay	4	3	37	0	1	1	4	81	2	133
Venezuela (Bolivarian Republic of)	0	2	25	0	4	1	0	43	1	76

2.5 Near and Middle East	Local			Regional			International			Total
Country	at risk	not at risk	un-known	at risk	not at risk	un-known	at risk	not at risk	un-known	
Bahrain	0	0	1	0	0	0	0	0	0	1
Egypt	3	33	40	0	0	0	0	32	3	111
Iraq	7	8	9	0	2	0	0	19	2	47
Jordan	0	5	17	0	1	0	0	9	0	32
Kuwait	0	0	0	0	2	0	0	1	0	3
Lebanon	0	1	0	0	0	1	0	3	0	5
Libya	0	1	2	0	1	0	0	2	0	6
Oman	0	2	16	0	0	0	0	5	0	23
Qatar	0	0	0	0	0	0	0	0	0	0
Saudi Arabia	0	0	9	0	1	1	0	3	0	14

2.5 Near and Middle East	Local			Regional			International			Total
Country	at risk	not at risk	un-known	at risk	not at risk	un-known	at risk	not at risk	un-known	
Sudan	0	36	20	0	0	0	0	11	2	69
Syrian Arab Republic	1	4	3	0	0	1	0	7	3	19
United Arab Emirates	0	0	0	0	0	0	0	0	0	0
Yemen	0	8	25	0	0	1	0	2	1	37

2.6 North America	Local			Regional			International			Total
Country	at risk	not at risk	un-known	at risk	not at risk	un-known	at risk	not at risk	un-known	
Canada	26	0	15	10	4	4	4	43	0	106
United States of America	42	9	33	8	5	3	18	147	3	268
American Samoa	0	0	0	0	0	0	0	16	1	17
Guam	0	3	2	0	0	0	0	3	0	8
Johnston Island	0	0	0	0	0	0	0	0	0	0
Midway Island	0	0	0	0	0	0	0	0	0	0
Northern Mariana Islands	0	0	1	0	0	0	0	12	0	13
Puerto Rico	0	0	0	0	0	0	0	1	1	2
United States Virgin Islands	0	0	0	0	0	0	0	2	0	2
Wake Island	0	0	0	0	0	0	0	0	0	0

2.7 Southwest Pacific	Local			Regional			International			Total
Country	at risk	not at risk	un-known	at risk	not at risk	un-known	at risk	not at risk	un-known	
Australia	17	9	100	2	2	0	23	186	11	350
Norfolk Island	0	0	0	0	0	0	0	0	0	0
Cook Islands	2	2	2	0	1	0	0	16	1	24
Fiji	0	1	11	0	1	0	0	14	1	28
Kiribati	0	0	2	0	0	0	0	7	1	10
Marshall Islands	0	0	0	0	0	0	0	0	0	0
Micronesia (Federated States of)	0	0	0	0	0	0	0	0	0	0
Nauru	0	0	0	0	0	0	0	0	0	0
New Zealand	9	0	8	2	1	0	2	10	2	34
Tokelau	0	0	0	0	0	0	0	0	0	0
Niue	2	0	0	0	0	0	0	0	0	2
Palau	0	0	0	0	0	0	0	11	1	12
Samoa	0	0	3	0	0	0	0	21	1	25
Solomon Islands	0	1	7	0	0	0	0	27	1	36
Tonga	1	1	1	0	0	0	0	15	0	18
Tuvalu	0	3	0	0	0	0	0	5	0	8
Vanuatu	1	4	1	0	0	0	0	5	0	11