May 2023 CGRFA-19/23/10.2/Inf.2

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Food and Agriculture Organization of the United Nations

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Продовольственная и сельскохозяйственная организация Объединенных Наций

Organización de las Naciones Unidas para la Alimentación y la Agricultura

منظمة الأغذية والزراعة للأمم المتحدة

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Item 10.2 of the Provisional Agenda
Nineteenth Regular Session
Rome, 17–21 July 2023
STATUS AND TRENDS OF ANIMAL GENETIC RESOURCES - 2022[1]

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[1] Based on data reported by National Coordinators for the Management of Animal Genetic Resources to DAD-IS by September 2022.

Documents can be consulted at www.fao.org

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I. INTRODUCTION

According to the request of the Twelfth Regular Session of the Commission on Genetic Resources for Food and Agriculture (Commission),[2] this report follows the structure set out in the document *Format and content of future status and trends reports on animal genetic resources*,[3] taking into account the amendments requested by the Commission at its Fourteenth Regular Session.[4] The analysis is based on FAO's Global Databank for Animal Genetic Resources (Global Databank), the backbone of the Domestic Animal Diversity Information System (DAD-IS). It updates the data published in the report *Status of animal genetic resources – 2020*.[5]

Prior to the analysis, all National Coordinators for the Management of Animal Genetic Resources (NC-AnGR) were asked to update their national data as completely as possible by 28 August 2022. The present report begins by describing the state of reporting on animal genetic resources for food and agriculture and the progress made in this respect 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 status of the world's livestock breeds in terms of their risk of extinction (risk status). Calculations are based on the data available in DAD-IS as of 2 September 2022. DAD-IS applies the method for assigning breeds to risk-status categories according to the FAO guidelines on *In vivo conservation of animal genetic resources*,[6] which was approved with the endorsement of the guidelines by the Commission at its Fourteenth Regular Session.[7,8] No indicators based on the breed classification of "adaptedness" (locally adapted versus exotic) are presented, inasmuch as the amount of information available in DAD-IS by September 2022 was still insufficient for a sound interpretation of those indicators. The report presents indicators that are directly linked to the 2030 Agenda for Sustainable Development and Sustainable Development Goals (SDG)[9] of the United Nations, specifically to Target 2.5 of Goal 2: "End hunger, achieve food security and improved nutrition and promote sustainable agriculture." The annexes to the report provide a detailed breakdown of the state of reporting, by country and by region.

[2] CGRFA-12/09/Report, paragraph 39.
[3] CGRFA/WG-AnGR-5/09/3.2.
[4] CGRFA-14/13/Report, paragraphs 28–32.
[5] CGRFA-18/21/10.2/Inf.6.
[6] FAO. 2013. In vivo *conservation of animal genetic resources*. FAO Animal Production and Health Guidelines. No. 14. Rome. https://www.fao.org/3/i3327e/i3327e.pdf
[7] CGRFA-14/13/Report paragraph 60.
[8] CGRFA-14/13/12, paragraph 12.
[9] https://sdgs.un.org/goals

II. STATE OF REPORTING

The Global Databank currently contains data from 182 countries (and 15 dependent territories) and for 37 species. The total number of national breed populations recorded in the Global Databank increased slightly during the reporting period, from 15 115 in 2021 to 15 313 in 2022 (Table 1). The total number of mammalian national breed populations recorded in September 2022 was 11 555, as compared to 11 409 in February 2021. The total number of avian national breed populations recorded in 2022 was 3 758, as compared to 3 706 in 2021.

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	Proportion with population data (%)	Number of national breed populations	Proportion 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
2014	11062	60	3807	56	182
2016	11116	61	3799	57	182
2018	11371	62	3689	58	182
2021	11409	66	3706	61	182
2022	**11555**	**66**	**3758**	**63**	**182**

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

Since 2021, the percentage of avian national breed populations for which some population data are available (including those populations for which no updates have been provided during the last ten years) has increased from 61 percent to 63 percent, whereas for mammals the proportion has remained stable around 66 percent (Table 1). Figure 1 presents the proportions and numbers of national breed populations for which population data have been reported at least once in the past, according to region. The level of activity in updating data differs substantially among countries and regions (Figure 2). As shown in Figure 2, sixty-three countries and teritories have updated the census size information for at least one of their national breed populations since the start of 2019. For 17 countries the last update was done between 2015 and 2018, and for seven countries the last update was between 2013 and 2014. For these seven countries, this means that if no update is provided during the next two years, all breeds will be considered to have “unknown” risk status when calculating official indicators for risk of extinction[10] and in the next status and trends report. For 110 countries and territories there have been no population updates since 2012.

[10] CGRFA-14/13/Report, paragraph 29.

Figure 1. Proportions (% - relative length of coloured bars) and numbers of national breed populations for which population data have been reported per region

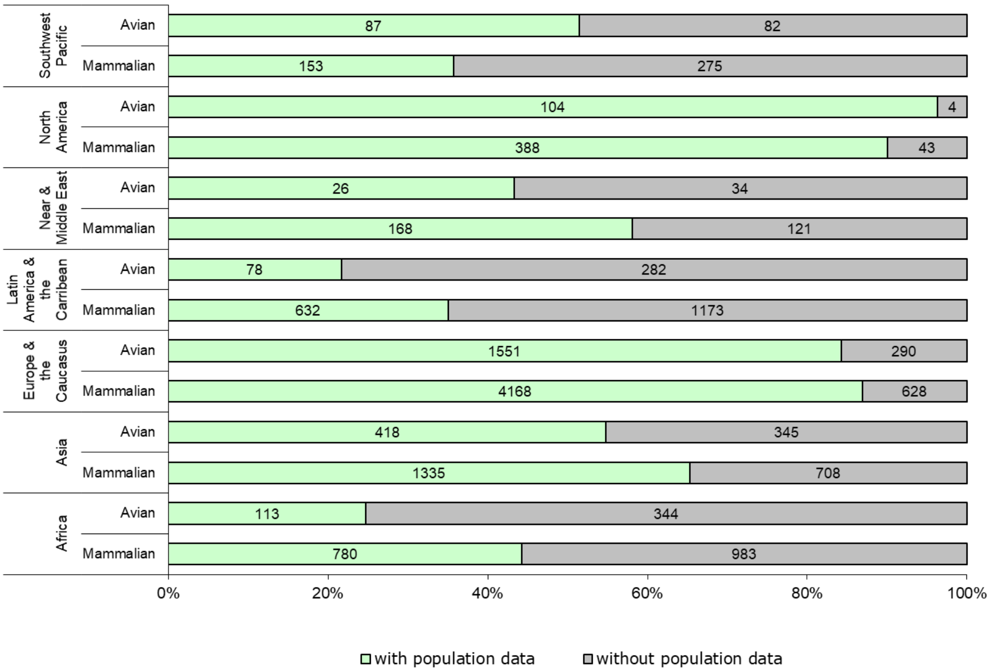
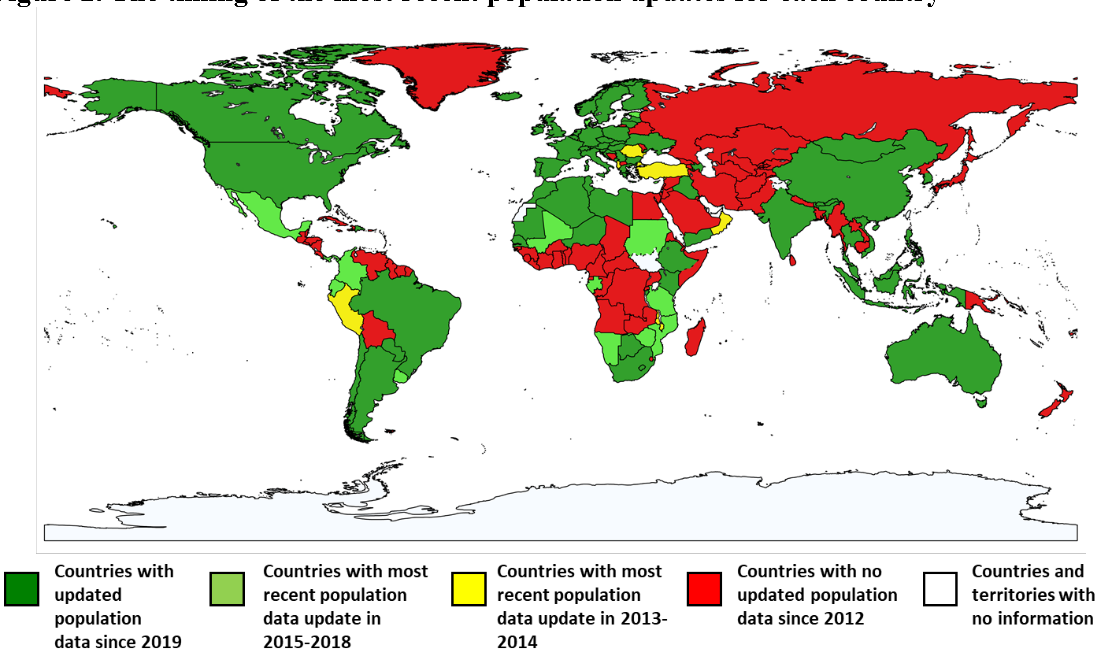


Figure 2. The timing of the most recent population updates for each country



Source: United Nations Geospatial. 2020. Map of the World. United Nations. Cited 22 August 2022. www.un.org/geospatial/file/3420/download?token=TUP4yDmF modified with DAD-IS; https://www.fao.org/dad-is

Notes: Final boundary between the Sudan and South Sudan has not yet been determined. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.

As of September 2022, 8 243 (54 percent) national breed populations remained unclassified by NC-AnGR with regard to adaptedness (locally adapted versus exotic), compared to 9 571 (63 percent) in 2021. Although the proportion of classified breeds has continued to increase (from 37 percent to 46 percent), the proportion was still considered too small to justify further analysis of breed populations according to their adaptedness. Therefore, no indicator based on this classification system is presented in this report.

III. BREED DIVERSITY

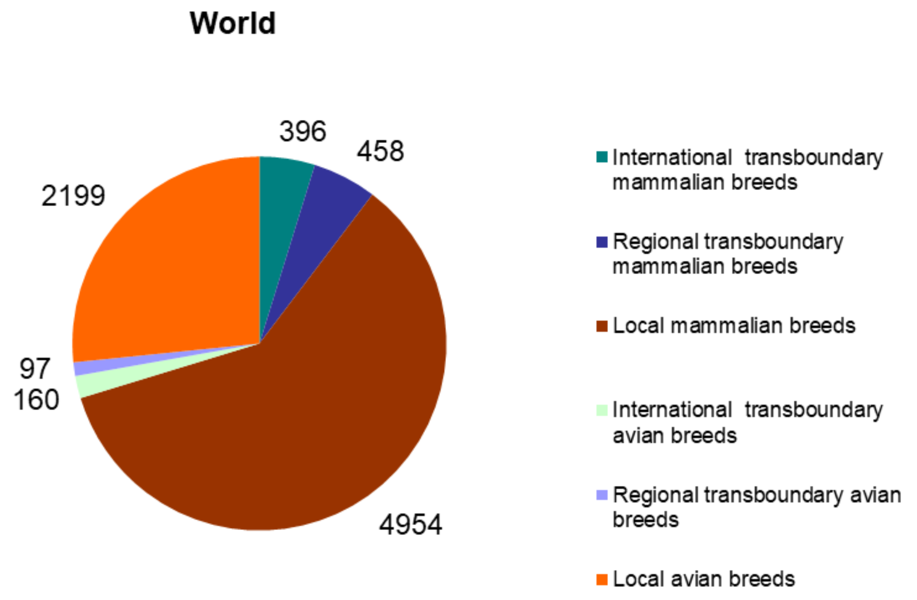
A global total of 8 859 breeds (compared to 8 771 in 2021 and 8 803 in 2018) has been reported; 7 739 are local (reported in only one country) breeds (compared to 7 700 in 2021 and 7 745 in 2018)[11] and 1 120 are transboundary (reported in more than one country) breeds (compared to 1 071 in 2021 and 1 058 in 2018). Among the transboundary breeds, 564 (compared to 513 in 2021 and 511 in 2018) are regional transboundary (reported in only one region) breeds and 555 (compared to 558 in 2021 and 547 in 2018) are international transboundary (reported in more than one region) breeds. Presently, 7 percent or 595 breeds (compared to 619 in 2021 and 600 in 2018) are classified as extinct, of which nine are transboundary breeds (compared to 11 in 2021 and six in 2018). The decreases that have occurred in the numbers of extinct breeds relate to corrections made by in countries in their breed inventories. Four of the extinct breeds are considered as cryoconserved only, i.e. having enough genetic material stored to allow potentially their reconstitution. As a rule, extinct breeds were excluded from the analyses undertaken to produce the results presented in the subsequent sections of this document; any exceptions to this rule are indicated.

Figure 3a shows the shares of local, regional transboundary and international transboundary breeds among the mammalian and avian breeds of the world. Approximately 70 percent of reported breeds belong to mammalian species. In mammalian species, the number of regional transboundary breeds is similar to the number of international transboundary breeds. Conversely, in avian species, international transboundary breeds outnumber regional transboundary breeds by almost a 2-to-1 margin.

Mammalian breeds outnumber avian breeds in all regions of the world (Figure 3b). Considerable variation exists among regions in terms of the proportions of the three geographic classes of breeds. In all regions but North America and Southwest Pacific, local breeds make up more than 60 percent of all breeds. Conversely, in those two regions, international transboundary breeds constitute the majority of breeds (Figure 3b).

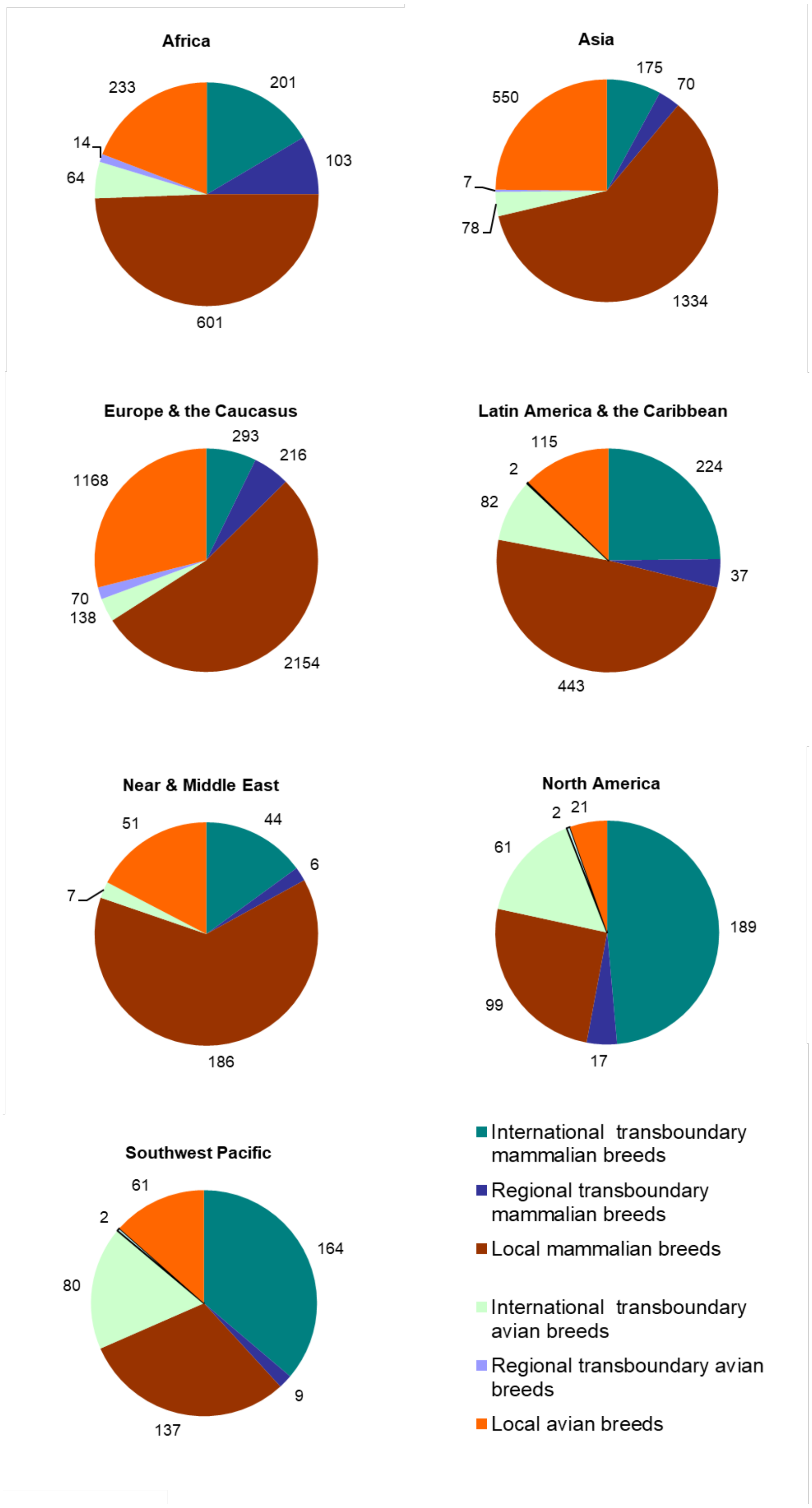
Regional transboundary mammalian breeds are relatively numerous (more than 5 percent of the respective total number of breeds in the region) in Europe and the Caucasus, and Africa. In only Europe and the Caucasus are there large numbers of regional transboundary avian breeds (70 of such breeds in Europe and the Caucasus versus fewer than 15 in each of the other regions).

Figure 3a. Numbers of local and transboundary breeds at global level



[11] The decreases in numbers of local breeds in recent years is related to corrections in inventories made by some countries.

Figure 3b. Numbers of local and transboundary breeds at the regional level



Note: 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 numbers of reported local breeds of mammalian and avian species for each region of the world. For most livestock species, Europe and the Caucasus and Asia have the largest number of local breeds. The dromedary, for which most of the local breeds are 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. The totals in some categories have decreased relative to past years, because some countries have corrected their inventories, such as by removing duplicate or otherwise incorrect breed names.

Table 2. Mammalian species – numbers of reported local breeds

Species	Africa	Asia	Europe & the Caucasus	Latin America & the Caribbean	Near & Middle East	North America	Southwest Pacific	World
Ass	24	42	48	24	13	6	3	160
Bactrian camel		12	3					15
Buffalo	3	97	8	9	5	1	2	125
Cattle	193	262	379	138	31	14	32	1049
Dromedary	49	15	1		28		2	95
Goat	100	203	207	37	36	7	11	601
Guinea pig	4			13				17
Horse	52	137	374	71	16	25	25	700
Pig	55	232	194	58	1	10	16	566
Rabbit	11	16	246	14	7	8		302
Sheep	102	269	602	62	49	21	38	1143
Yak		29	2			1		32
Others	8	20	90	17		6	8	149
Total	**601**	**1334**	**2154**	**443**	**186**	**99**	**137**	**4954**

Note: Figures exclude extinct breeds. Figures for Alpaca, American bison, deer, dog, dromedary × Bactrian camel, guanaco, llama and vicuña are combined in the "others" category

Table 3. Avian species – numbers of reported local breeds

Species	Africa	Asia	Europe & the Caucasus	Latin America & the Caribbean	Near & Middle East	North America	Southwest Pacific	World
Chicken	138	326	802	62	33	11	37	1409
Duck	16	101	111	20	3	1	12	264
Goose	10	44	118	5	2		2	181
Muscovy duck	4	8	6	1	1		2	22
Pigeon	7	13	42	7	8	1	2	80
Quail	3	23	19	4				49
Turkey	11	11	46	9	2	8	5	92
Others	44	24	24	7	2		1	102
Total	**233**	**550**	**1168**	**115**	**51**	**21**	**61**	**2199**

Note: Figures exclude extinct breeds. Figures for cassowary, Chilean tinamou, duck × Muscovy duck, emu, guinea fowl, ñandu, ostrich, partridge, peacock, pheasant and swallow are combined in the "others" category.

Tables 4 and 5, respectively, show the numbers of reported regional transboundary breeds of mammalian and avian species in each region of the world. For several mammalian species; including sheep, horses, rabbit and pigs; Europe and the Caucasus has the largest number of regional transboundary breeds. Africa has more regional transboundary breeds of cattle and goats than any other region. Europe and the Caucasus, however, has by far the most regional transboundary breeds among avian species.

The existence of large numbers of regional transboundary breeds has implications for management and conservation of animal genetic resources for food and agriculture, and in particular highlights the need for cooperation at regional or subregional levels.

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

Species	Africa	Asia	Europe & the Caucasus	Latin America & the Caribbean	Near & Middle East	North America	Southwest Pacific	World
American Bison			1					1
Ass	4	3	3	1	0	0	0	11
Buffalo	1	8	1	1				11
Cattle	41	18	30	10	1	3	2	105
Deer		1	1					2
Dog			2					2
Dromedary	1	1						2
Goat	14	12	15	2	1	4	1	49
Guinea pig				1				1
Horse	9	10	36	6		4		65
Pig	3	2	14	4		2		25
Rabbit	4		32	1				37
Sheep	26	15	81	9	4	4	6	145
South American camelids				2				2
Total	**103**	**70**	**216**	**37**	**6**	**17**	**9**	**458**

Note: Figures exclude extinct breeds.

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

Species	Africa	Asia	Europe & the Caucasus	Latin America & the Caribbean	Near & Middle East	North America	Southwest Pacific	World
Chicken	12	2	41	1		1	2	59
Duck		2	13					15
Duck x Muscovy duck	1							1
Goose		2	7					9
Guinea fowl				1				1
Ostrich	1							1
Pigeon			2					2
Quail		1						1
Turkey			7			1		8
Total	**14**	**7**	**70**	**2**		**2**	**2**	**97**

Note: Figures exclude extinct breeds.

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

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

Species	Number of breeds
Ass	5
Bactrian camel	2
Buffalo	4
Cattle	110
Deer	9
Dromedary	2
Goat	38
Horse	68
Pig	34
Rabbit	25
Sheep	96
South American camelids	3
Total	**396**

Note: Figures exclude extinct breeds.

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

Species	Total
Cassowary	1
Chicken	107
Duck (domestic)	12
Emu	1
Goose (domestic)	14
Guinea fowl	4
Muscovy duck	1
Ostrich	3
Pigeon	1
Turkey	16
Total	**160**

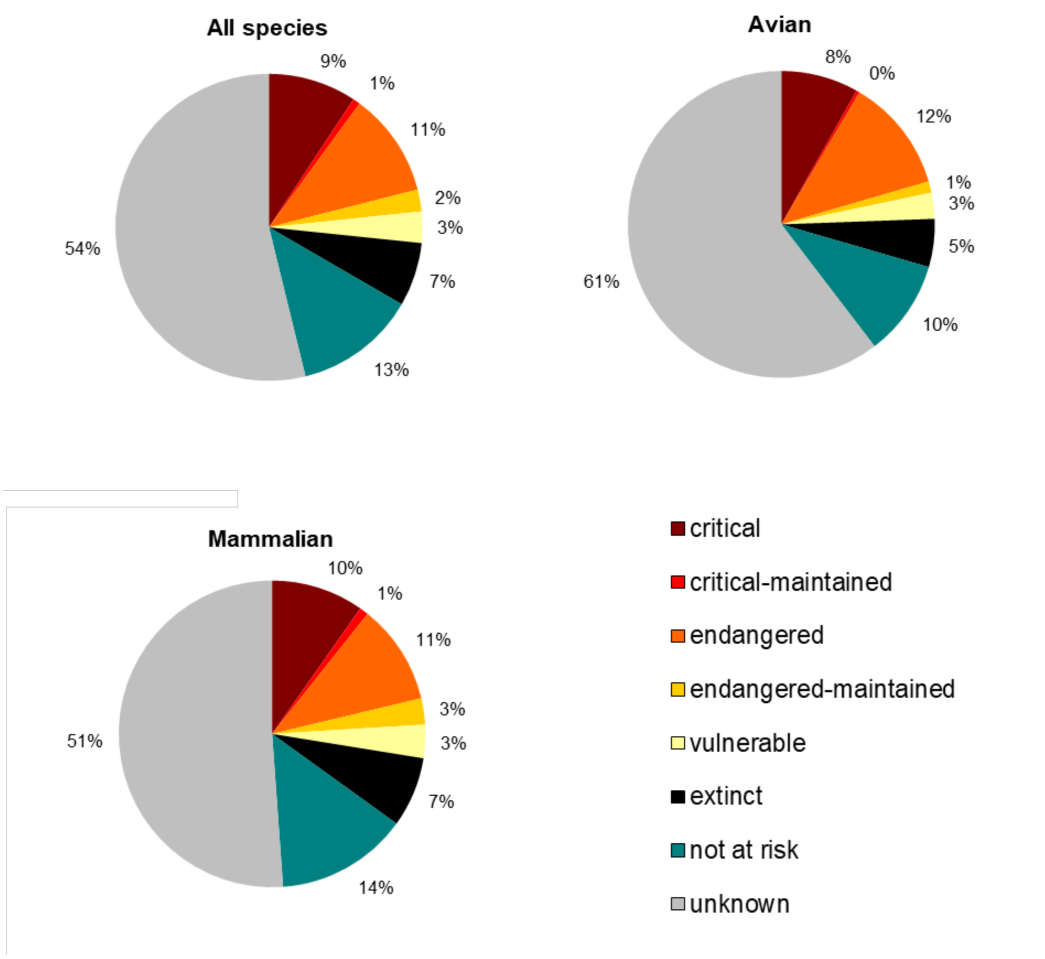
Note: Figures exclude extinct breeds.

IV. RISK STATUS OF ANIMAL GENETIC RESOURCES

Upon the request of the Commission at its Fourteenth Regular Session, the method for assigning breeds to risk-status categories was amended by the introduction of a cut-off point of ten years, beyond which the risk status of a breed is considered to be unknown if no more recent population data have been reported.[12] The results presented in this section regarding breeds with unknown status are therefore comparable with those presented in the last four reports on the *Status and trends of animal genetic resources* [13,14,15,16] but not with earlier versions. With exception of the unknown status, the data for other risk categories can only be compared with the status and trends reports from 2018 and 2021, because, as was noted previously in this report, the risk classification was modified according to the FAO guidelines on *In vivo conservation of animal genetic resources*,[17] which has been implemented in DAD-IS since 2018 only.

A total of 2 360 breeds are classified as being at risk of extinction (27 percent of all breeds including those that are extinct). The percentage of breeds classified as being of unknown risk of extinction is approximately 54 percent, which is similar to 2021 (Figure 4).

Figure 4. Proportions of the world's breeds by risk status category, overall and according to species type (mammalian and avian)

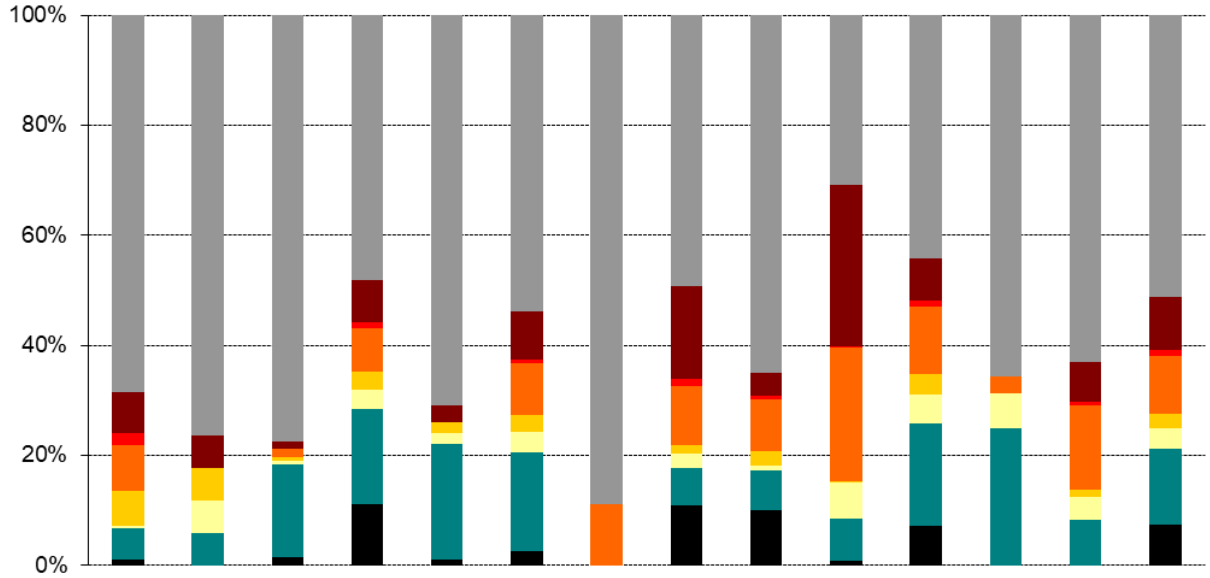


[12] CGRFA-14/13/Report, paragraph 29.
[13] CGRFA-15/15/Inf.18.
[14] CGRFA-16/17/Inf.15.
[15] CGRFA-17/19/11.2/Inf.4.
[16] CGRFA-18/21/Inf.5.
[17] FAO. 2013. In vivo *conservation of animal genetic resources*. FAO Animal Production and Health Guidelines. No. 14. Rome. https://www.fao.org/3/i3327e/i3327e.pdf

Among mammalian species, sheep, cattle and horses have the largest numbers of breeds at risk. However, rabbits (61 percent), horses (33 percent) and sheep (30 percent) are the species with the largest proportions of breeds at risk. Figure 5 also shows the large number of breeds for which no risk-status data are available. This problem is especially notable for particular species, including buffalo breeds (77 percent), bactrian camel breeds (76 percent) and dromedary breeds (71 percent). This lack of data is a serious constraint to effective prioritization and planning of breed conservation measures. Cattle are the species with the largest number of breeds (159) reported as extinct. Large numbers of extinct breeds of sheep (107), horses (101), and pigs (70) are also reported. Some breeds may have become extinct without being ever documented. All such breeds will, clearly, be missing from this analysis.

Among avian species, chickens have by far the greatest number of breeds at risk on a global scale (Figure 6). The proportion of avian breeds of unknown risk status is even greater than for mammalian species. Extinct breeds have mainly been reported among chickens. A few cases among ducks, geese, muscovy ducks, quail and turkeys have also been reported.

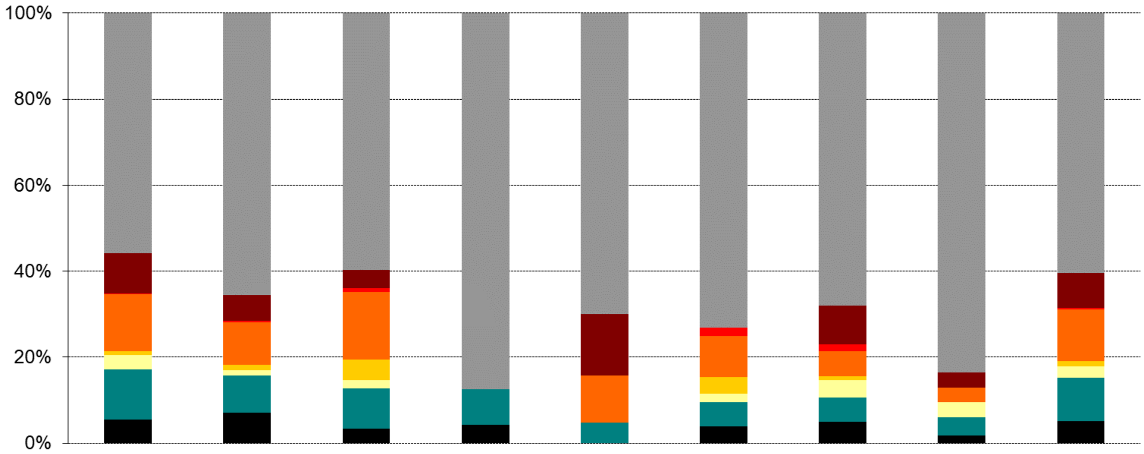
Figure 5. Risk status of the world's mammalian breeds in September 2022: absolute (table) and percentage (chart) figures by species (species refer to both the bar above and numbers below)



	Ass	Bactrian Camel	Buffalo	Cattle	Drome-dary	Goat	Guinea pig	Horse	Pig	Rabbit	Sheep	Yak	Other	Total
Unknown	122	13	110	684	71	380	16	460	451	113	660	21	106	3207
Critical	13	1	2	110	3	62	0	158	29	108	114	0	12	612
Critical-maintained	4	0	0	17	0	5	0	12	5	1	14	0	1	59
Endangered	15	0	2	112	0	67	2	99	66	89	184	1	26	663
Endangered-maintained	11	1	1	44	2	22	0	15	18	1	56	0	2	173
Vulnerable	1	1	1	50	2	25	0	24	6	24	78	2	7	221
Not at risk	10	1	24	247	21	127	0	65	50	28	278	8	14	873
Extinct	2	0	2	159	1	19	0	101	70	3	107	0	0	464
Total	**178**	**17**	**142**	**1423**	**100**	**707**	**18**	**934**	**695**	**367**	**1491**	**32**	**168**	**6272**

* Other: Alpaca, Bactrian camel × dromedary crosses, deer, guanacos, vicuñas and dogs.

Figure 6. Risk status of the world's avian breeds in September 2022: absolute (table) and percentage (chart) figures by species (species refer to both the bar above and numbers below)

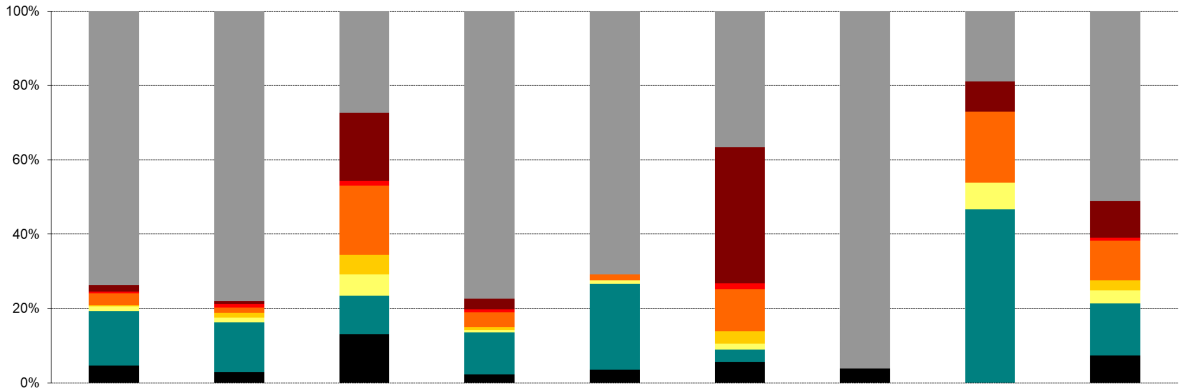


	Chicken	Duck	Goose	Muscovy duck	Pigeon	Quail	Turkey	Other	Total
Unknown	931	205	126	21	58	38	83	97	1562
Critical	156	19	9	0	12	0	11	4	211
Critical-maintained	3	1	2	0	0	1	2	0	9
Endangered	221	31	33	0	9	5	7	4	310
Endangered-maintained	14	4	10	0	0	2	1	0	31
Vulnerable	56	4	4	0	0	1	5	4	71
Not at risk	194	27	20	2	4	3	7	5	262
Extinct	91	22	7	1	0	2	6	2	131
Total	**1666**	**313**	**211**	**24**	**83**	**52**	**122**	**116**	**2587**

* Other: duck × Muscovy duck crossings, Chilean tinamou, cassowaries, emus, ñandus, peacocks and swallows.

Figures 7 and 8 show the distribution of breeds at risk by region for mammalian and avian species. The regions with the greatest proportions of breeds classified as at risk are North America and Europe and the Caucasus for both mammalian breeds (54 and 49 percent, respectively) and avian breeds (60 and 39 percent, respectively). These 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, the Europe and the Caucasus region has by far the largest number of at-risk breeds. Despite the seemingly large proportions of at-risk breeds of these two regions, problems in other regions may be obscured by the large number of breeds with unknown risk status. In the other regions, 80 percent of breeds are of unknown risk status. The Southwest Pacific reports no recently updated population data for any of their mammal breeds (Australia being the sole country reporting for avian breeds in the region), while Latin America and the Caribbean, Near and Middle East, Africa and Asia report no updated population data for more than 85% of their avian breeds.

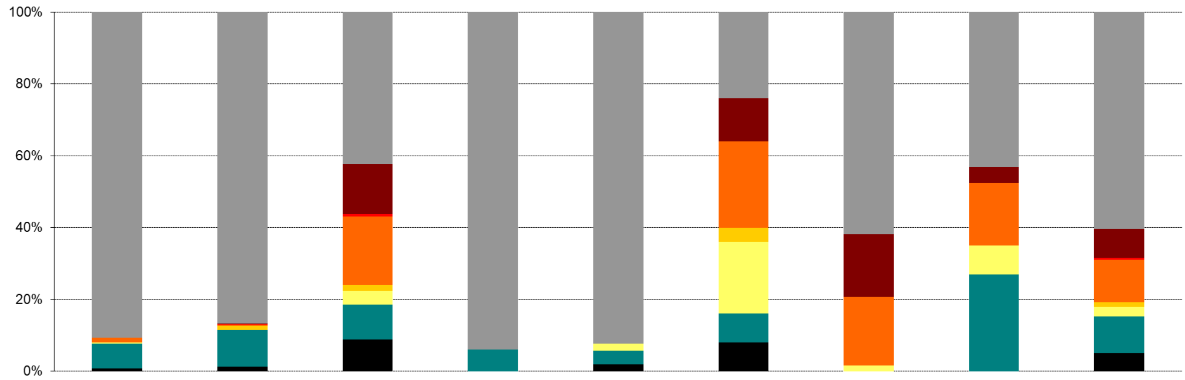
Figure 7. Risk status of the world's mammalian breeds in September 2022: absolute (table) and percentage (chart) figures by region and for international transboundary breeds



	Africa	Asia	Europe & the Caucasus	Latin America & the Caribbean	Near & Middle East	North America	Southwest Pacific	International transboundary breeds	World
Unknown	544	1128	748	380	141	45	146	75	3207
Critical	13	12	496	14	0	45	0	32	612
Critical-maintained	3	12	38	4	0	2	0	0	59
Endangered	24	21	506	19	3	14	0	76	663
Endangered-maintained	2	18	145	4	0	4	0	0	173
Vulnerable	10	20	156	3	2	2	0	28	221
Not at risk	108	193	281	56	46	4	0	185	873
Extinct	34	42	357	11	7	7	6	0	464
Total	**738**	**1446**	**2727**	**491**	**199**	**123**	**152**	**396**	**6272**

Note: The region name refers to both the bar above and the data in the table immediately below.

Figure 8. Risk status of the world's avian breeds in September 2022: absolute (table) and percentage (chart) figures by region and for international transboundary breeds



	Africa	Asia	Europe & the Caucasus	Latin America & the Caribbean	Near & Middle East	North America	Southwest Pacific	International transboundary breeds	World
Unknown	226	489	575	110	48	6	39	69	1562
Critical	0	1	189	0	0	3	11	7	211
Critical-maintained	0	1	8	0	0	0	0	0	9
Endangered	3	2	259	0	0	6	12	28	310
Endangered-maintained	0	6	24	0	0	1	0	0	31
Vulnerable	1	0	50	0	1	5	1	13	71
Not at risk	17	58	133	7	2	2	0	43	262
Extinct	2	7	119	0	1	2	0	0	131
Total	**249**	**564**	**1357**	**117**	**52**	**25**	**63**	**160**	**2587**

Note: The region name refers to both the bar above and the data in the table immediately below.

Tables 8 and 9 present the numbers of extinct mammalian and avian breeds by species and region. The numbers of breeds reported to be extinct decreased slightly from 2021 to 2022, from 619 to 595, due to adjustments to countries' inventories. The Europe and the Caucasus region has reported far more extinct mammalian and avian breeds than any other region: 77 percent of the extinct mammalian breeds and 90 percent of avian breeds are reported from this region. The predominance of Europe and the Caucasus in terms of the number of breeds reported as extinct may relate, at least in part, to the relatively advanced state of breed inventory and monitoring in this region, in addition to socioeconomic factors affecting breed development. The year of extinction has been reported for only 54 percent of such cases (321). A total 212 breeds became extinct after 2000 (Table 10), a large number (96) of which were avian breeds, mostly industrial lines that are no longer maintained and actively bred.

Table 8. Numbers of extinct mammalian breeds, by species and region

Species	Africa	Asia	Europe & the Caucasus	Latin America & the Caribbean	Near & Middle East	North America	South-west Pacific	World
Ass	3	0	1	0	1	0	0	5
Buffalo	0	0	2	0	0	0	0	2
Cattle	19	18	105	7	5	0	2	156
Dromedary	1	0	0	0	0	0	0	1
Goat	1	2	16	0	0	0	0	19
Horse	6	1	86	2	0	5	1	101
Pig	0	15	53	1	0	0	1	70
Rabbit	0	0	2	1	0	0	0	3
Sheep	4	6	92	0	1	2	2	107
Total	**34**	**42**	**357**	**11**	**7**	**7**	**6**	**464**

Table 9. Numbers of extinct avian breeds, by species and region

Species	Africa	Asia	Europe & the Caucasus	Latin America & the Caribbean	Near & Middle East	North America	Southwest Pacific	World
Chicken	0	6	84	0	1	0	0	90
Duck	0	0	22	0	0	0	0	22
Goose	0	0	7	0	0	0	0	7
Guinea fowl	2	0	0	0	0	0	0	2
Muscovy duck	0	1	0	0	0	0	0	1
Quail	0	0	2	0	0	0	0	2
Turkey	0	0	4	0	0	2	0	6
Total	**2**	**7**	**119**	**0**	**1**	**2**	**0**	**131**

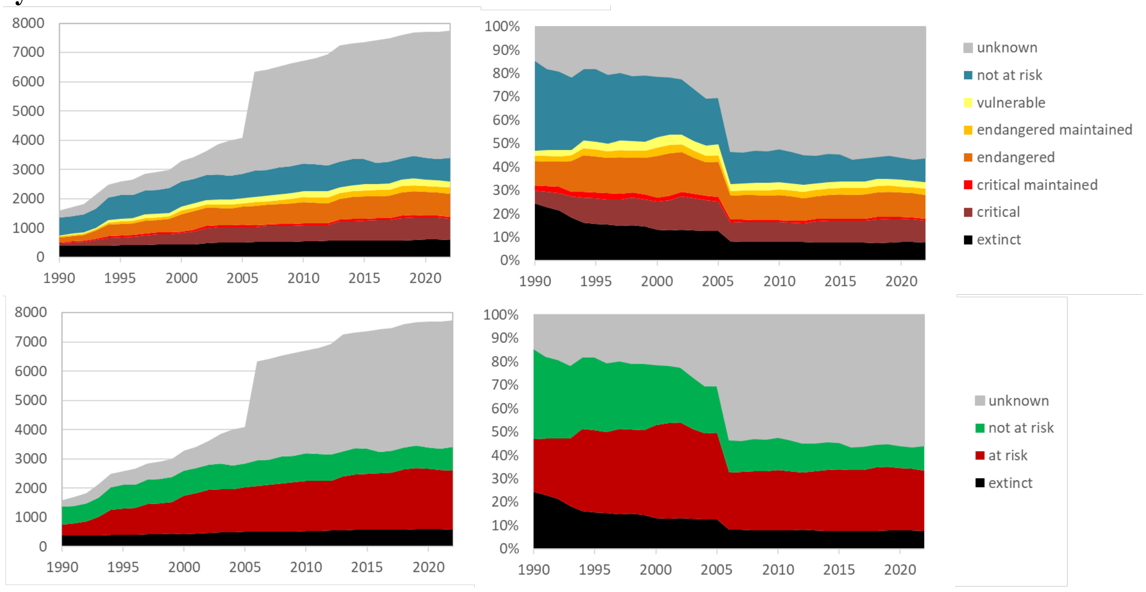
Table 10. Numbers and proportions of breeds, according to their reported years of extinction

Year	Number of breeds	Proportion (%)
Unspecified	274	46
1900 and before	8	1
1901–2000	101	17
2001–2010	81	14
after 2010	131	22
Total	**595**	**100**

V. TRENDS IN BREED STATUS

The data presented in Figure 9 show the evolution of risk status of local breeds for the period 1990-2022. During this period, the number of extinct breeds increased slightly, while its relative proportion decreased. As stated earlier, the year of extinction is unknown for the majority of those breeds. The drastic change in terms of total number of breeds is linked to the countries' preparation processes for the first report on *The State of the World's Animal Genetic Resources for Food and Agriculture*[18] and the adoption of *The Global Plan of Action for Animal Genetic Resources and the Interlaken Declaration*, [19] which resulted in a large number of new breed records reported in DAD-IS for the first time in 2006. However, relatively few of those breed records were accompanied by information on the population size, resulting in a sharply increased proportion of local breeds with unknown risk status. The situation has been relatively stable since then, with the proportion of local breeds (considering also extinct breeds in the total) of unknown risk status increasing slightly from 55 to 56 percent during the last ten years. Other risk categories have also remained relatively stable over time. It is worth noting that over the last 15 years, the number of countries reporting population size on DAD-IS has gradually increased, from 24 in 2008 to 43 in 2022.

Figure 9. Changes in risk status of local breeds from 1990 to 2022, expressed in terms of numbers and proportions (%) and according to detailed and general risk classification systems



Note: In the general risk classification system; vulnerable, endangered, endangered maintained, critical and critical maintained breeds are combined into an overall "at risk"category.

[18] FAO. 2007. *The State of the World's Animal Genetic Resources for Food and Agriculture*, B. Rischkowsky & D. Pilling, eds. Rome. http://www.fao.org/docrep/010/a1250e/a1250e00.htm

[19] FAO. 2007. *Global Plan of Action for Animal Genetic Resources adn teh Interlaken Declaration*. Rome. http://www.fao.org/3/a1404e/a1404e.pdf

VI. ANIMAL GENETIC RESOURCES REFLECTED IN THE SUSTAINABLE DEVELOPMENT GOALS

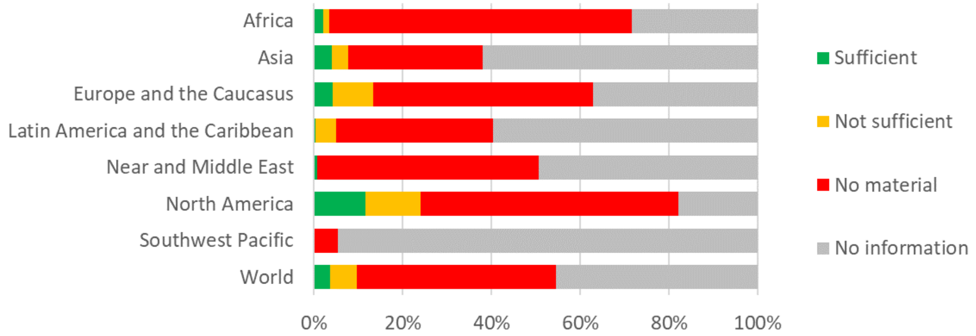
The 2030 Agenda for Sustainable Development was adopted at the UN Post-2015 Summit on 25 September 2015. It includes 17 SDG and 169 targets.[20] The United Nations Statistical Commission (UNSC) at its Forty-Sixth Session (3-6 March 2015) discussed and agreed on the process and modalities for the development of the indicator framework. It endorsed the establishment of the Inter-Agency and Expert Group on SDG indicators (IAEG-SDG), consisting of national statistical offices, and as observers the regional, and international organizations and agencies. The Report of the IAEG-SDG from February 2016[21] invited the Statistical Commission to adopt two indicators directly related to animal genetic resources for food and agriculture, related to SDG Target 2.5. Target 2.5 is described as "*By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed*".

The global indicator framework was adopted by the General Assembly on 6 July 2017 and is contained in the Resolution adopted by the General Assembly on Work of the Statistical Commission pertaining to the 2030 Agenda for Sustainable Development (A/RES/71/313).[22] The following two indicators related to this target were adopted:

(i) SDG Indicator 2.5.1b: Number of animal genetic resources for food and agriculture secured in either medium or long term conservation facilities; and
(ii) SDG Indicator 2.5.2: Proportion of local breeds, classified as being at risk, not-at risk or unknown level of risk of extinction.

With regard to SDG Indicator 2.5.1b, DAD-IS has provided the possibility for countries to report information on cryconservation programmes for each breed only since 21 November 2017. The information reported in DAD-IS (Figure 10) is still scarce, with cryoconservation status known for only 54 percent of local breeds (52 percent in 2021). According to DAD-IS, genetic material is cryoconserved for only a very small proportion (around 9.5 percent) of local breeds and for only around 3.6 percent of breeds is the quantity of stored material considered to be sufficient for population reconstitution.[23] The figures underline the large progress in countries' reporting information on cryoconservation to DAD-IS since 2018.[24] Note that following the request of countries, information on transboundary breeds should be provided in the next round of reporting for SDG Indicator 2.5.1b.

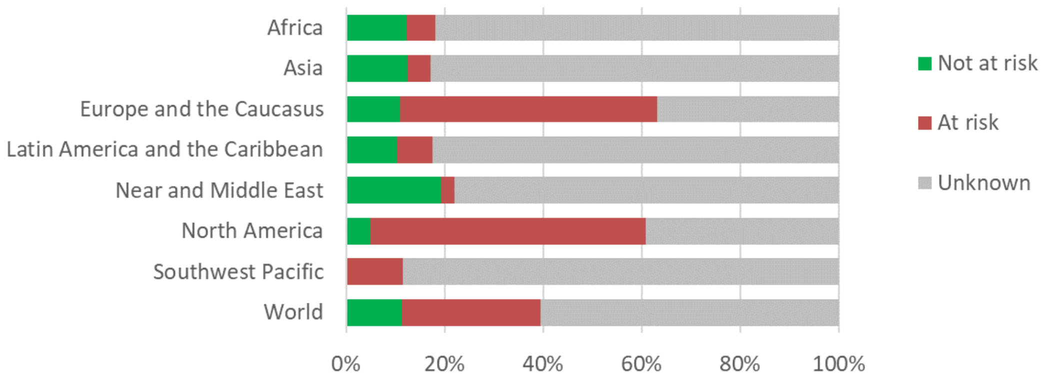
Figure 10. Indicator 2.5.1b of the Sustainable Development Goals on the proportions (%) of local breed populations with material stored in a cryobank by region



[20] https://sustainabledevelopment.un.org/
[21] E/CN.3/2016/2/Rev.1.
[22] http://undocs.org/A/RES/71/313
[23] Compared to 2021 SDG reporting, there is a slight difference in results due to computation adjustments.
[24] CGRFA/WG-AnGR-11/21/Inf.5.

Results for SDG Indicator 2.5.2 are presented in Figure 11. Across the world, when excluding extinct breeds, 61 percent of local breeds are classified as of unknown status for risk of extinction, 28 percent as at risk, and 11 percent as not at risk. This result differs substantially from the proportions obtained when considering local and transboundary breeds together (Figure 4), because the majority of transboundary breeds are considered as not at risk. Results also differ widely across regions. For example, in the Southwest Pacific region, 88 percent of local breeds are currently of unknown risk status. In all regions except Europe and the Caucasus and North America, more than 75 percent of local breeds are of unknown risk status. In Europe and the Caucasus, 37 percent of local breeds have unknown risk status, 52 percent are considered as at risk, and 11 percent not at risk.

Figure 11. Indicator 2.5.2. of the Sustainable Development Goals on the proportions (%) of local breeds, classified as being at risk, not at risk or unknown level of risk of extinction



VII. CONCLUSIONS

During the period between February 2021 and September 2022 the coverage of the Global Databank remained rather stable. Breed-related information still remains far from complete, especially for Southwest Pacific, Western and Central Africa, and Central Asia regions. For 54 percent of all reported breeds, status for risk of extinction is unknown because of missing population data or the lack of recent updates.

Despite significant improvements due to an updating progress undertaken in 2022, data on the "adaptedness" (i.e. locally adapted versus exotic) classification of breeds is still missing for a majority (54 percent) of national breed populations. Therefore, figures and tables based on this classification system were not prepared for this report and presenting such information in future reports will depend on availability of data. Adaptness is an important characteristic, as locally adapted breeds are logical candidates for genetic improvement to increase food security, either through pure- or cross-breeding programmes. Locally adapted breeds are those that have been in the country for a sufficient time to be genetically adapted to one or more of traditional production systems or environments in the country.[25] Breeds can usually be classified for adaptedness based on local knowledge, without the need for a breed-wise census. Therefore, the large proportion of missing information suggests a need for greater attention by many NC-AnGR in providing breed data.

The quantity of data in DAD-IS regarding the cryoconservation status of national breed populations increased slightly between 2021 and 2022, from 52 to 54 percent. SDG Indicator 2.5.1b reveals, however, that efforts need to be strengthened in the collection of genetic material for local breeds, as currently less than 10 percent of local breeds are reported to have genetic material stored in a gene bank. Cryoconservation is a powerful tool for both ensuring a population is safe from extinction and for management of genetic diversity *in situ*.[26]

Explicit reporting on the proportions of local breeds classified as being at risk of extinction, not at risk or unknown is an inherent part of status and trends reports, thereby linking these reports directly to SDG Indicator 2.5.2. These data, either alone or in combination with SDG Indicator 2.5.1b, reflect a dramatic situation for local breeds. First, for 61 percent of local breeds no population size data have been reported within the last 10 years. This large proportion of missing data obscures somewhat the overall situation for risk of extinction. Considering only the local breeds for which information is provided, more than 70 percent are classified as being at risk. Moreover, for only a small proportion of local breeds has some cryoconserved material been reported to exist.

DAD-IS is the authorized information system for monitoring the livestock diversity aspects of Target 2.5 under the SDGs, in addition to serving its long-term purpose as the Convention on Biological Diversity Clearing House Mechanism for information on diversity of animal genetic resources for food and agriculture. The new version of DAD-IS allows the regular provision of up-to-date data for the annual reports on the SDGs, but the comprehensiveness of the information relies upon more frequent reporting of breed data by countries.

[25] CGRFA/WG-AnGR-7/12/Inf.7.
[26] Boes, J., Boettcher, P. & Honkatukia, M., eds. 2023. *Innovations in cryoconservation of animal genetic resources – Practical guide*. FAO Animal Production and Health Guidelines, No. 33. Rome. FAO. https://doi.org/10.4060/cc3078en

Annex 1
Status of population data reported by each country and region

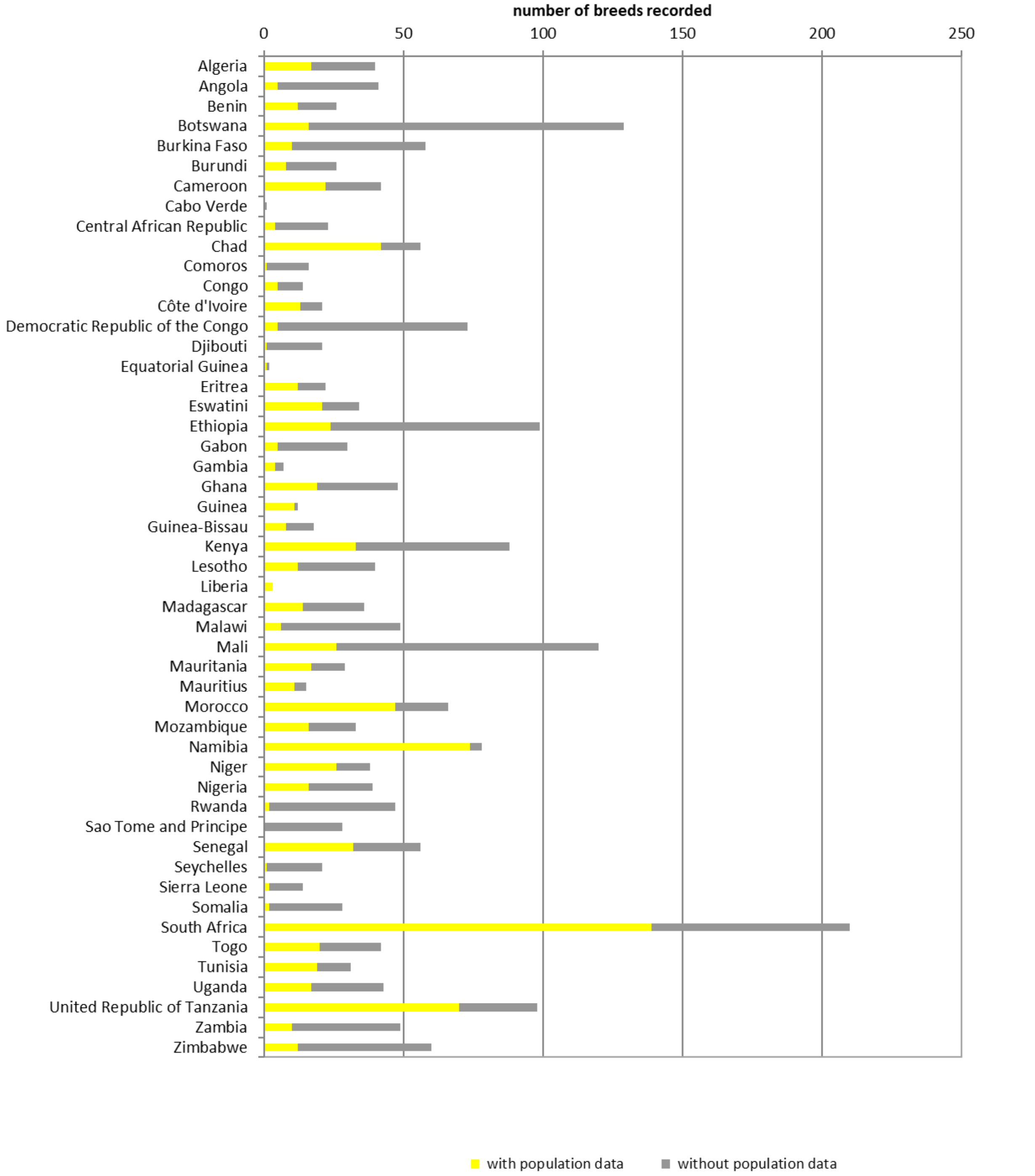
1.1. Africa
1.2. Asia
1.3. Europe and the Caucasus
1.4. Latin America and the Caribbean
1.5. Near and Middle East
1.6. North America
1.7. Southwest Pacific

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 and the world.

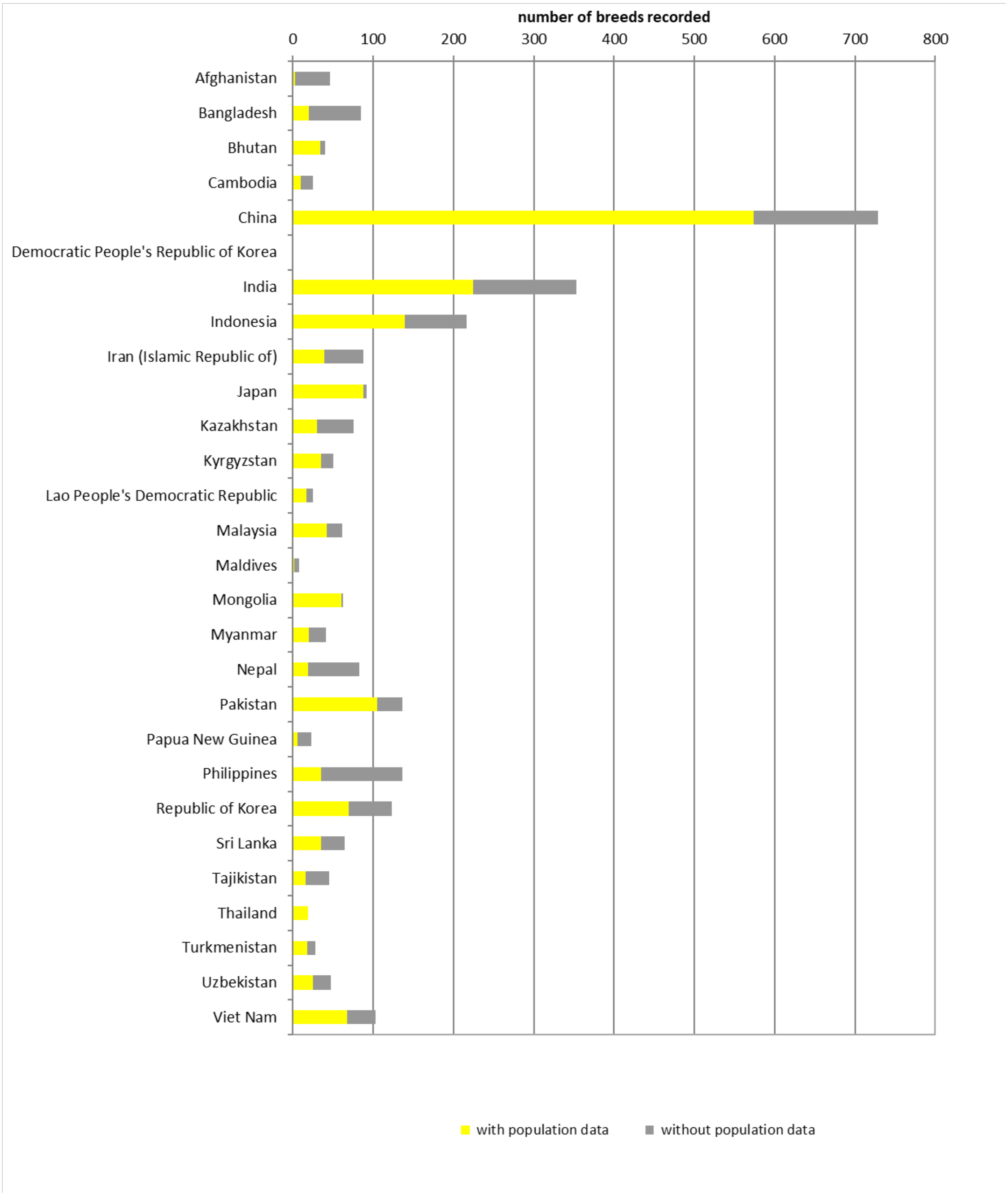
The graphics show the number of breeds for which population data have been recorded and the number of breeds included in DAD-IS for which no population data have yet been recorded, in countries and territories. Dependent territories are listed below the respective country.

Unless otherwise indicated, the country names follow the UN M49 classification. The designations employed and the presentation of material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

1.1 Africa

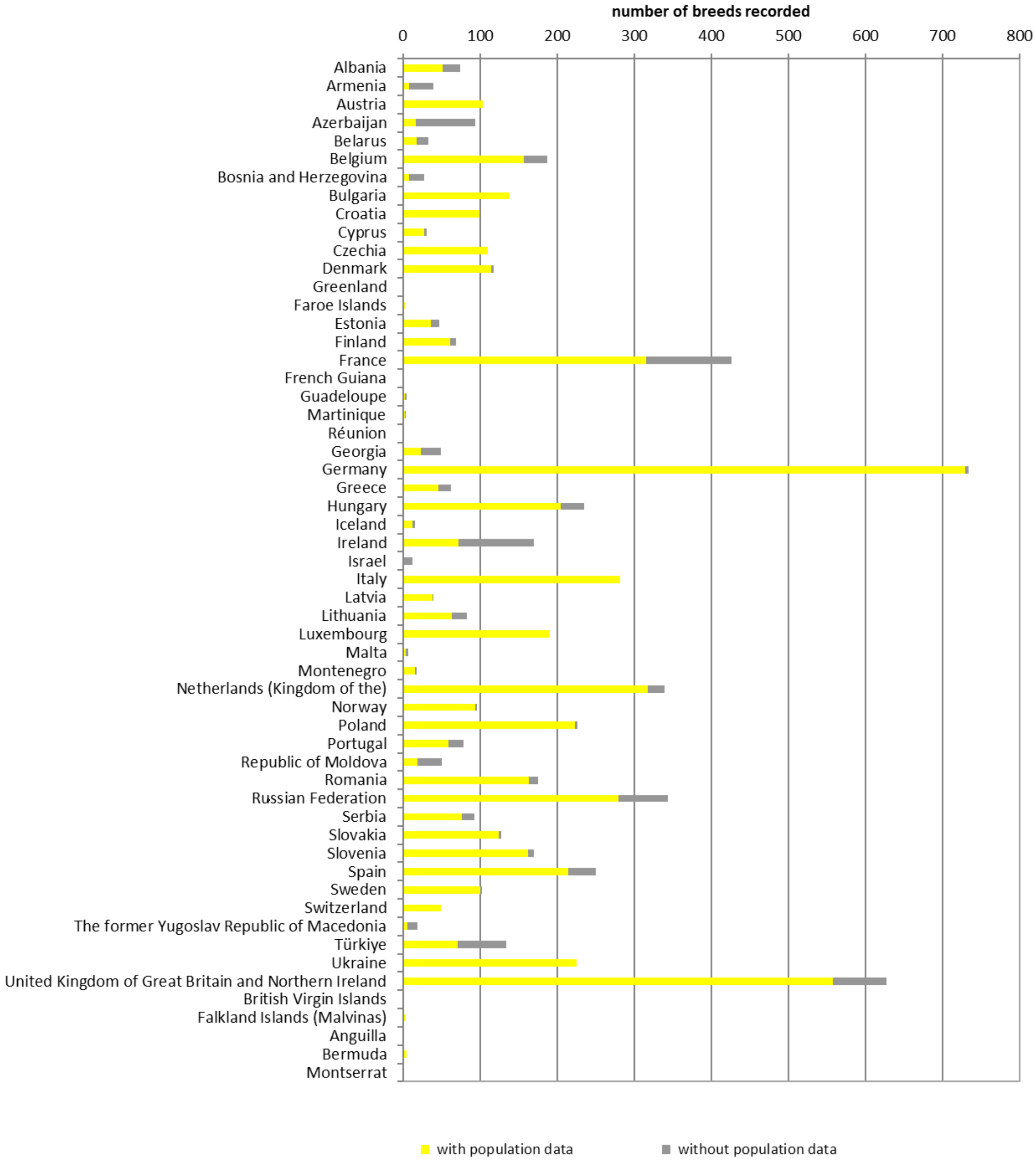

number of breeds recorded
0
50
100
150
200
250
Algeria
Angola
Benin
Botswana
Burkina Faso
Burundi
Cameroon
Cabo Verde
Central African Republic
Chad
Comoros
Congo
Côte d'Ivoire
Democratic Republic of the Congo
Djibouti
Equatorial Guinea
Eritrea
Eswatini
Ethiopia
Gabon
Gambia
Ghana
Guinea
Guinea-Bissau
Kenya
Lesotho
Liberia
Madagascar
Malawi
Mali
Mauritania
Mauritius
Morocco
Mozambique
Namibia
Niger
Nigeria
Rwanda
Sao Tome and Principe
Senegal
Seychelles
Sierra Leone
Somalia
South Africa
Togo
Tunisia
Uganda
United Republic of Tanzania
Zambia
Zimbabwe
with population data
without population data

1.2 Asia



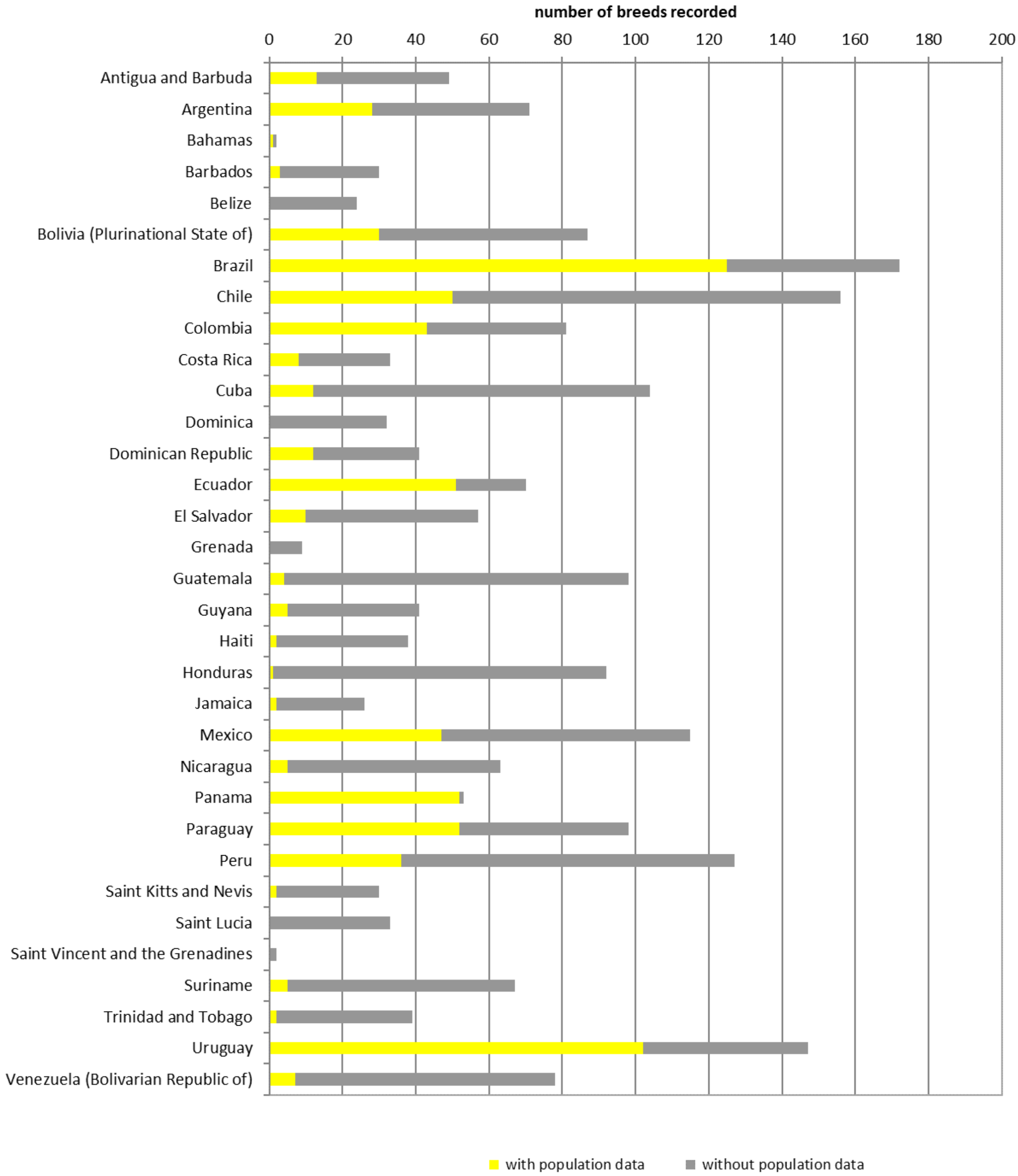
number of breeds recorded
0
100
200
300
400
500
600
700
800
Afghanistan
Bangladesh
Bhutan
Cambodia
China
Democratic People's Republic of Korea
India
Indonesia
Iran (Islamic Republic of)
Japan
Kazakhstan
Kyrgyzstan
Lao People's Democratic Republic
Malaysia
Maldives
Mongolia
Myanmar
Nepal
Pakistan
Papua New Guinea
Philippines
Republic of Korea
Sri Lanka
Tajikistan
Thailand
Turkmenistan
Uzbekistan
Viet Nam
with population data
without population data

1.3 Europe and the Caucasus

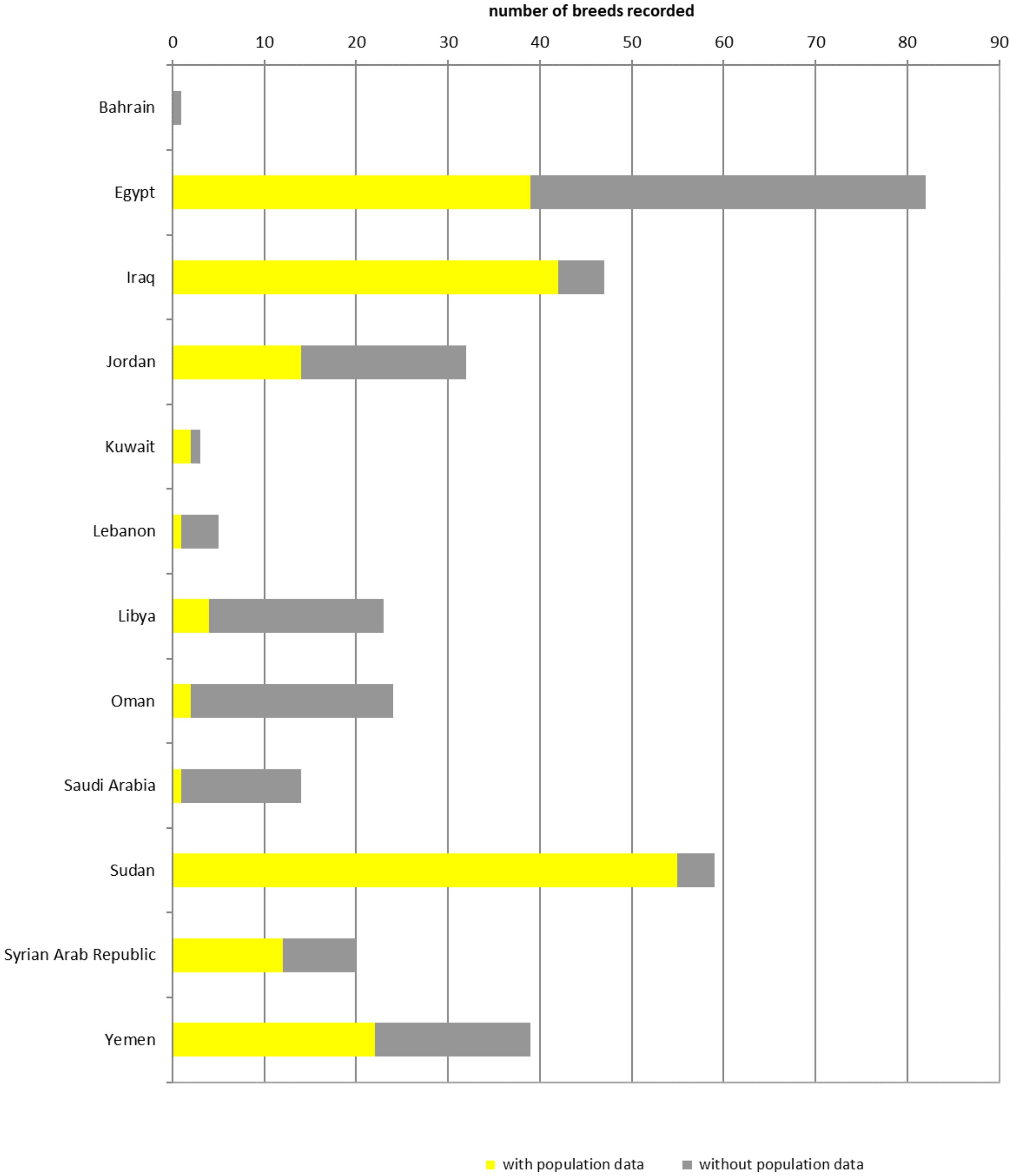


*A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas). (Editorial directive ST/CS/SER.A/42, United Nations Secretariat, 3 August 1999).

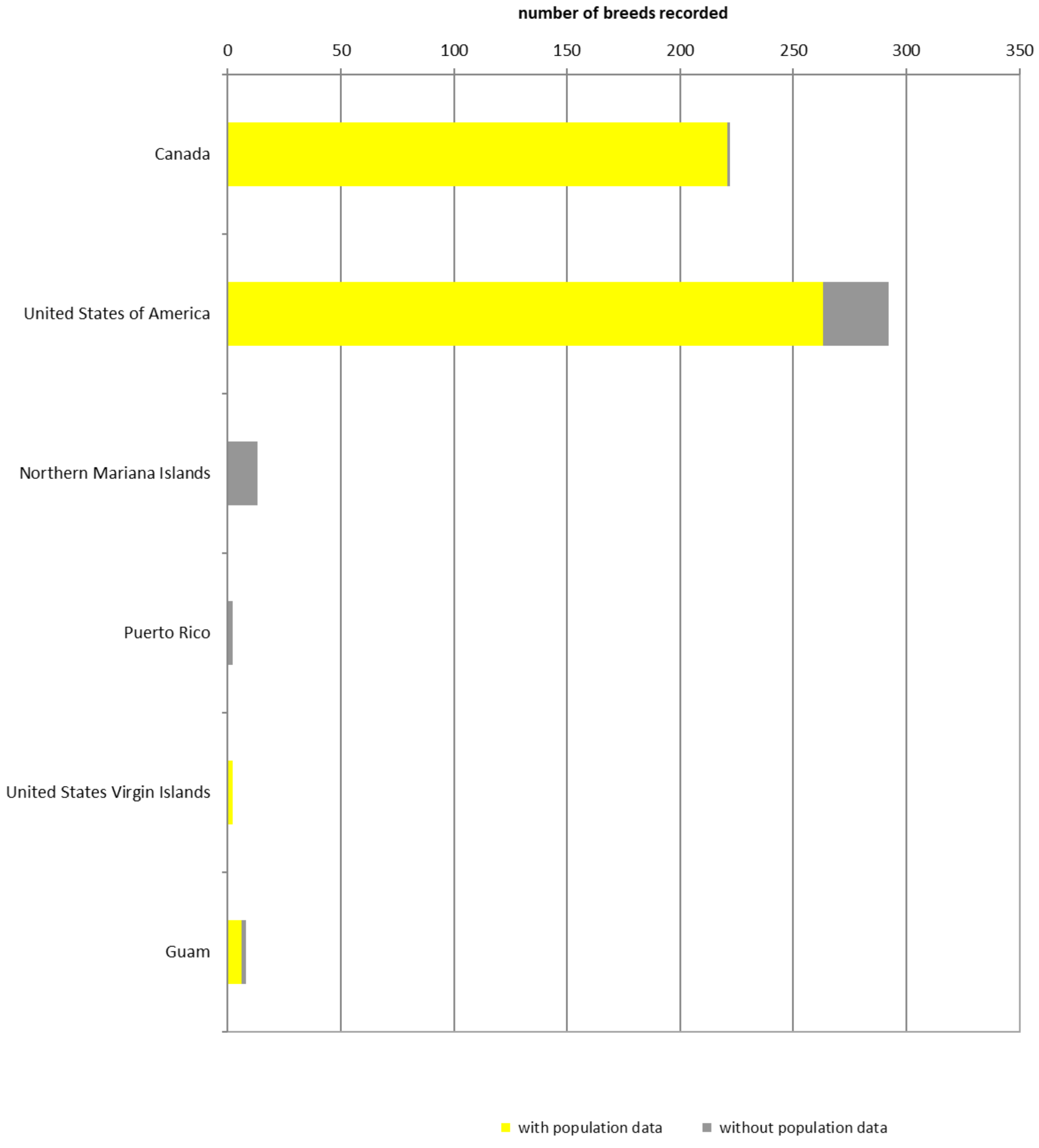
1.4 Latin America and the Caribbean



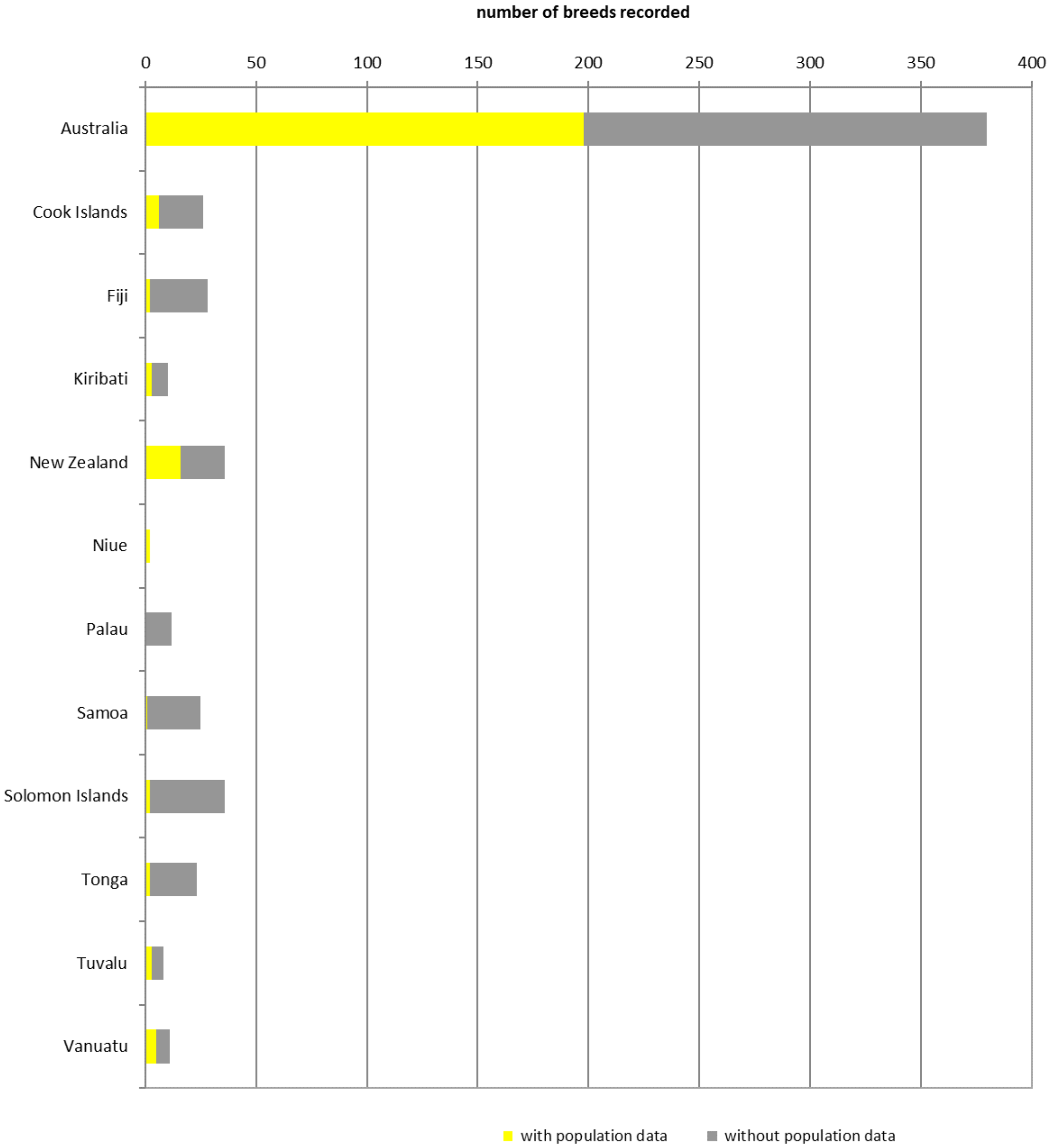
1.5 Near and Middle East



1.6 North America



1.7 Southwest Pacific



Annex 2
Numbers 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 numbers of local, regional transboundary and international transboundary breeds and their respective risk status by region and by country for which national breed populations have been reported in DAD-IS. Dependent territories are listed below the respective country. Unless otherwise indicated, the country names follow the UN M49 classification. The designations employed and the presentation of material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The tables will help countries to identify the need for action in surveying and monitoring and in 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	49	103	682	7	22	88	58	150	57	1216
Asia	88	236	1560	5	15	57	57	108	88	2214
Europe and the Caucasus	1738	364	1220	133	50	103	153	183	95	4039
Latin America and the Caribbean	40	58	460	4	5	30	92	157	57	903
Near and Middle East	6	46	185	0	2	4	4	30	17	294
North America	67	6	47	15	0	4	107	131	12	389
Southwest Pacific	23		175	1	0	10	82	117	45	453
World	**2011**	**813**	**4329**	**165**	**94**	**296**	**184**	**228**	**144**	**8264**

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	2	0	20	0	2	4	2	9	0	39
Angola	0	0	18	0	1	2	0	20	0	41
Benin	0	0	10	0	2	5	1	7	0	25
Botswana	1	0	11	3	2	18	12	74	8	129
Burkina Faso	0	0	22	1	4	7	1	20	3	58
Burundi	0	6	4	0	0	0	1	13	2	26
Cameroon	0	0	21	0	4	6	2	6	0	39
Cabo Verde	0	0	0	0	0	0	1	0	0	1
Central African Republic	0	0	9	1	4	2	0	7	0	23
Chad	0	0	35	0	1	10	1	8	1	56
Comoros	0	0	7	0	0	1	0	7	1	16
Congo	0	0	3	0	1	2	1	7	0	14
Côte d'Ivoire	0	0	12	1	2	3	0	3	0	21

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	
Democratic Republic of the Congo	0	0	25	0	1	4	3	35	5	73
Djibouti	0	0	15	0	0	2	1	2	1	21
Equatorial Guinea	0	0	0	0	1	0	0	1	0	2
Eritrea	0	0	6	0	0	11	1	3	1	22
Eswatini	0	0	15	2	2	0	1	14	0	34
Ethiopia	1	2	71	0	0	2	1	19	3	99
Gabon	0	0	10	3	1	4	0	10	2	30
Gambia	0	0	0	0	2	0	0	4	0	6
Ghana	0	0	21	0	3	4	2	12	5	47
Guinea	0	0	6	0	1	1	0	2	1	11
Guinea-Bissau	0	0	4	0	1	1	0	12	0	18
Kenya	0	2	30	0	3	7	6	36	4	88
Lesotho	0	3	9	0	1	0	2	22	2	39
Liberia	0	0	0	0	1	1	0	1	0	3
Madagascar	0	0	17	0	0	0	2	15	2	36
Malawi	0	4	12	0	1	2	2	23	4	48
Mali	0	4	53	1	11	9	1	36	5	120
Mauritania	0	5	3	0	4	6	0	11	0	29
Mauritius	1	0	5	0	0	1	0	6	1	14
Morocco	9	15	10	0	1	2	2	21	6	66
Mozambique	0	2	9	1	4	1	2	13	1	33
Namibia	15	9	3	1	2	0	6	42	0	78
Niger	2	11	11	0	6	1	0	4	1	36
Nigeria	0	0	16	0	7	10	1	3	0	37
Rwanda	0	0	12	0	0	1	3	26	5	47
Sao Tome and Principe	0	0	6	0	0	1	3	17	1	28
Senegal	3	7	9	0	5	4	2	18	7	55
Seychelles	0	0	1	0	0	2	3	12	3	21
Sierra Leone	0	0	0	0	1	0	2	10	1	14
Somalia	0	0	18	0	0	4	1	3	2	28
South Africa	8	2	58	3	2	4	29	85	6	197
Togo	0	0	6	0	2	9	2	11	11	41
Tunisia	1	4	2	0	0	3	0	12	8	30
Uganda	0	0	12	0	3	7	3	16	2	43
United Republic of Tanzania	6	27	16	1	11	4	5	23	2	95
Zambia	0	0	15	0	0	2	5	23	4	49
Zimbabwe	0	0	4	4	3	2	9	29	6	57

2.2 Asia	Local			Regional			International			Total
Country	at risk	not at risk	unknown	at risk	not at risk	unknown	at risk	not at risk	un-known	
Afghanistan	0	0	37	0	0	7	1	1	0	46
Bangladesh	0	0	48	1	2	3	7	14	7	82
Bhutan	11	11	3	2	1	0	4	7	1	40
Cambodia	0	0	16	0	1	4	0	4	0	25
China	2	14	611	2	2	6	16	38	14	705
Democratic People's Republic of Korea	0	0	1	0	0	0	0	0	0	1
India	22	139	118	3	10	18	7	31	5	353
Indonesia	12	13	127	0	2	5	8	26	21	214
Iran (Islamic Republic of)	0	0	59	0	0	5	2	13	9	88
Japan	0	0	48	0	0	1	7	24	10	90
Kazakhstan	0	0	46	1	0	10	4	9	6	76
Kyrgyzstan	0	0	26	0	0	7	2	7	7	49
Lao People's Democratic Republic	0	0	16	0	1	2	1	2	3	25
Malaysia	3	4	17	1	2	3	4	20	6	60
Maldives	0	0	4	0	0	0	1	3	0	8
Mongolia	12	31	3	1	3	0	0	12	0	62
Myanmar	0	0	19	0	0	1	4	17	0	41
Nepal	0	0	33	2	2	11	9	20	5	82
Pakistan	0	0	104	0	3	10	2	12	4	135
Papua New Guinea	0	0	9	0	0	1	1	12	0	23
Philippines	2	2	56	0	1	3	10	43	16	133
Republic of Korea	21	4	25	0	0	1	10	53	9	123
Sri Lanka	0	0	22	0	6	2	7	25	3	65
Tajikistan	0	0	20	1	0	11	2	8	1	43
Thailand	2	14	0	0	1	0	0	2	0	19
Turkmenistan	0	0	10	0	0	8	2	2	2	24
Uzbekistan	0	0	21	1	0	10	2	6	5	45
Viet Nam	1	4	61	0	0	5	2	20	7	100

2.3 Europe and the Caucasus	Local			Regional			International			Total
Country	at risk	not at risk	unknown	at risk	not at risk	unknown	at risk	not at risk	unknown	
Albania	1	3	39	1	0	3	0	25	1	73
Armenia	0	0	13	0	0	8	2	12	4	39
Austria	21	2	0	9	10	0	5	36	0	83
Azerbaijan	0	3	51	1	1	11	1	22	0	90
Belarus	0	0	15	0	0	3	2	8	1	29
Belgium	47	2	27	13	9	3	16	62	2	181
Bosnia and Herzegovina	0	0	19	0	1	0	2	3	0	25
Bulgaria	67	17	0	4	0	0	5	33	0	126
Croatia	33	10	2	3	2	1	9	35	0	95
Cyprus	2	0	15	0	0	1	3	8	1	30
Czechia	23	4	0	12	8	0	12	49	0	108
Denmark	41	7	4	4	6	0	13	41	1	117
Greenland	0	0	1	0	0	0	0	0	0	1
Faroe Islands	1	1	0	0	0	0	0	1	0	3
Estonia	1	0	10	0	0	3	5	20	7	46
Finland	12	3	8	3	1	3	4	30	5	69
France	78	21	157	26	14	3	31	67	3	400
French Guiana	0	0	1	0	0	0	0	0	0	1
Guadeloupe	0	0	0	0	0	0	2	1	2	5
Martinique	0	0	0	0	0	0	2	1	1	4
Réunion	0	0	0	0	0	0	0	1	0	1
Georgia	0	0	24	1	0	18	1	1	1	46
Germany	405	57	27	48	21	4	46	85	2	695
Greece	20	13	4	1	0	0	3	18	0	59
Hungary	62	46	45	6	5	5	10	46	7	232
Iceland	1	5	4	0	1	0	0	5	0	16
Ireland	5	0	33	6	3	16	29	59	18	169
Israel	0	0	3	0	0	0	0	4	5	12
Italy	195	21	0	15	5	0	9	37	0	282
Latvia	11	2	2	0	1	0	0	23	0	39
Lithuania	15	3	5	6	3	4	6	35	6	83
Luxembourg	113	1	0	16	8	0	9	44	0	191
Malta	0	0	2	1	0	0	0	4	0	7
Montenegro	11	1	1	0	1	0	0	4	0	18
Netherlands (Kingdom of the)	42	5	38	55	19	15	55	101	8	338
Norway	40	5	5	1	1	0	4	26	0	82
Poland	106	17	4	8	7	0	6	41	0	189
Portugal	31	18	5	1	3	0	0	21	0	79
Republic of Moldova	0	0	17	0	1	3	4	16	6	47
Romania	0	0	93	8	2	9	13	25	5	155
Russian Federation	0	0	178	4	1	25	15	39	19	281
Serbia	9	1	12	3	12	2	10	39	3	91
Slovakia	16	2	6	23	6	1	13	53	1	121
Slovenia	27	1	30	16	5	5	22	51	9	166
Spain	102	52	51	1	3	0	3	22	0	234
Sweden	43	2	7	4	0	3	7	29	3	98
Switzerland	17	7	1	7	2	1	1	9	0	45

2.3 Europe and the Caucasus	Local			Regional			International			Total
Country	at risk	not at risk	unknown	at risk	not at risk	unknown	at risk	not at risk	unknown	
The former Yugoslav Republic of Macedonia	0	0	7	0	1	1	0	9	1	19
Türkiye	8	7	72	1	0	3	1	14	5	111
Ukraine	45	13	10	11	2	5	17	48	10	161
United Kingdom of Great Britain and Northern Ireland	87	12	166	31	10	30	80	112	27	555
British Virgin Islands	0	0	1	0	0	0	0	0	0	1
Falkland Islands (Malvinas)	0	0	3	0	0	0	0	0	1	4
Anguilla	0	0	0	0	0	0	0	1	1	2
Bermuda	0	0	2	0	0	1	0	2	0	5
Montserrat	0	0	0	0	0	0	0	1	1	2

2.4 Latin America and the Caribbean	Local			Regional			International			Total
Country	at risk	not at risk	unknown	at risk	not at risk	unknown	at risk	not at risk	unknown	
Antigua and Barbuda	0	0	8	0	0	1	5	30	5	49
Argentina	3	7	14	2	0	0	8	37	0	71
Bahamas	0	0	1	0	0	0	1	0	0	2
Barbados	0	0	6	0	0	0	5	18	1	30
Belize	0	0	2	0	1	1	2	18	0	24
Bolivia (Plurinational State of)	0	0	26	0	0	5	8	41	7	87
Brazil	12	10	35	0	1	0	30	80	2	170
Chile	2	15	43	0	0	4	15	57	19	155
Colombia	5	15	7	1	1	1	8	39	4	81
Costa Rica	0	0	4	1	0	2	2	21	2	32
Cuba	0	0	44	0	1	2	13	39	5	104
Dominica	0	0	3	0	0	0	6	21	2	32
Dominican Republic	0	1	5	0	1	3	5	23	2	40
Ecuador	2	5	20	0	1	1	2	39	0	70
El Salvador	0	0	8	1	1	3	9	26	9	57
Grenada	0	0	1	0	0	0	1	6	1	9
Guatemala	0	0	21	1	1	6	13	46	10	98
Guyana	0	0	11	0	0	2	5	23	0	41
Haiti	0	0	9	0	0	3	4	17	4	37
Honduras	0	0	21	0	1	6	10	52	2	92
Jamaica	0	0	8	0	0	0	3	14	1	26
Mexico	0	2	35	1	2	4	15	54	2	115
Nicaragua	0	0	9	1	1	2	6	38	6	63
Panama	6	1	0	0	1	0	7	38	0	53
Paraguay	1	0	5	2	0	4	12	70	4	98
Peru	2	0	32	0	2	5	17	60	9	127
Saint Kitts and Nevis	0	0	19	0	0	0	1	8	2	30
Saint Lucia	0	0	14	0	0	0	6	12	1	33
Saint Vincent and the Grenadines	0	0	0	0	0	0	0	1	1	2
Suriname	0	0	13	0	0	3	7	38	6	67
Trinidad and Tobago	0	0	5	0	0	1	4	21	8	39
Uruguay	7	2	4	2	2	3	29	86	8	143
Venezuela (Bolivarian Republic of)	0	0	27	1	1	4	8	31	4	76

2.5 Near and Middle East	Local			Regional			International			Total
Country	at risk	not at risk	unknown	at risk	not at risk	unknown	at risk	not at risk	unknown	
Bahrain	0	0	1	0	0	0	0	0	0	1
Egypt	0	0	62	0	0	1	2	12	5	82
Iraq	0	0	22	0	0	2	0	14	2	40
Jordan	0	0	22	0	0	1	0	8	1	32
Kuwait	0	0	0	0	0	2	0	1	0	3
Lebanon	0	0	1	0	0	1	0	2	1	5
Libya	0	1	10	0	0	0	0	9	3	23
Oman	0	2	17	0	0	0	0	5	0	24
Saudi Arabia	0	0	9	0	1	1	0	2	1	14
Sudan	5	27	17	0	2	0	1	6	1	59
Syrian Arab Republic	0	0	8	0	0	1	0	4	6	19

2.5 Near and Middle East	Local			Regional			International			Total
Country	at risk	not at risk	unknown	at risk	not at risk	unknown	at risk	not at risk	unknown	
Yemen	0	1	31	0	1	0	1	2	2	38

2.6 North America	Local			Regional			International			Total
Country	at risk	not at risk	unknown	at risk	not at risk	unknown	at risk	not at risk	unknown	
Canada	24	1	0	14	0	0	73	104	4	220
United States of America	43	5	40	8	0	4	75	104	6	285
Northern Mariana Islands	0	0	1	0	0	0	1	10	1	13
Puerto Rico	0	0	0	0	0	0	0	1	1	2
United States Virgin Islands	0	0	1	0	0	0	0	1	0	2
Guam	0	0	5	0	0	0	0	2	1	8

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	23	0	109	1	0	5	77	120	41	376
Cook Islands	0	0	8	0	0	1	2	12	3	26
Fiji	0	0	12	0	0	1	2	12	1	28
Kiribati	0	0	2	0	0	0	1	5	2	10
New Zealand	0	0	17	0	0	3	3	6	5	34
Niue	0	0	2	0	0	0	0	0	0	2
Palau	0	0	0	0	0	1	2	9	0	12
Samoa	0	0	3	0	0	0	5	17	0	25
Solomon Islands	0	0	8	0	0	0	4	21	3	36
Tonga	0	0	5	0	0	3	1	13	1	23
Tuvalu	0	0	3	0	0	0	1	4	0	8
Vanuatu	0	0	6	0	0	0	0	4	1	11