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COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Item 7.2 of the Provisional Agenda

Twentieth Regular Session

Rome, 24–28 March 2025

STATUS AND TRENDS OF ANIMAL GENETIC RESOURCES – 2024[1]

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[1] Based on data reported by National Coordinators for the Management of Animal Genetic Resources to DAD-IS by June 2024.

I. INTRODUCTION

In accordance with 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 and trends of animal genetic resources – 2022*.[5]

Prior to the analysis, all National Coordinators for the Management of Animal Genetic Resources (NCs-AnGR) were asked to update their national data as completely as possible by end of June 2024.

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 27 June 2024. Breeds are assigned to risk-status categories in DAD-IS according to the method set out in 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, as the amount of information available in DAD-IS by June 2024 was still insufficient for a sound interpretation of such indicators. The report presents indicators that are directly linked to the 2030 Agenda for Sustainable Development and Sustainable Development Goals (SDGs)[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-12/23/4/Inf.1.
[6] FAO. 2013. In vivo *conservation of animal genetic resources*. FAO Animal Production and Health Guidelines. No. 14. Rome http://www.fao.org/docrep/018/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 184 countries (and 15 dependent territories) and for 39 species. The total number of national breed populations recorded in the Global Databank decreased slightly during the reporting period, from 15 313 in 2022 to 15 190 in 2024 (Table 1). The total number of mammalian national breed populations recorded in June 2024 was 11 550, as compared to 11 555 in September 2022. The total number of avian national breed populations recorded in 2024 was 3 640, as compared to 3 758 in 2022. These reduced numbers reflect the fact that several countries decided to delete the records of some of their national breed populations from DAD-IS, and that this occurred more often for avian species.

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	2 719	53	–	–	131
1995	3 019	73	863	85	172
1999	5 330	63	1 049	77	172
2006	10 512	43	3 505	39	181
2008	10 550	52	3 450	47	181
2010	10 507	54	3 414	47	182
2012	10 712	57	3 482	48	182
2014	11 062	60	3 807	56	182
2016	11 116	61	3 799	57	182
2018	11 371	62	3 689	58	182
2021	11 409	66	3 706	61	182
2022	11 555	66	3 758	63	182
2024	**11 550**	**69**	**3 640**	**63**	**184**

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

Since 2022, 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) remained stable at around 63 percent, whereas for mammals the proportion increased from 66 percent to 69 percent. 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 state of updating of population data varies substantially across countries and regions (Figure 2). As shown in Figure 2, for 70 countries and teritories the most recent year for which population size data are provided was 2021 or later. For 23 countries the most recent population size data are for years between 2017 and 2020, and for four countries the most recent poulation size data are for years between 2015 and 2016. In the case of these four countries, if no more recent data are provided within the next two years – that is, within the next reporting period – all breeds will be considered to have "unknown" risk status when calculating official indicators for risk status in the next status and trends report. For 102 countries and territories the most recent population data are for 2014 or before (this compares to the 110 countries for which the most recent population data recorded in DAD-IS in 2022 were for 2012 or earlier). A few countries provided substantial updates during the reporting period, for example Argentina, Australia and the Islamic Republic of Iran. This related to the development of the *Third Report on The State of the World on Animal Genetic Resources*, which triggered a larger than normal number of population updates between January and June 2024.

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

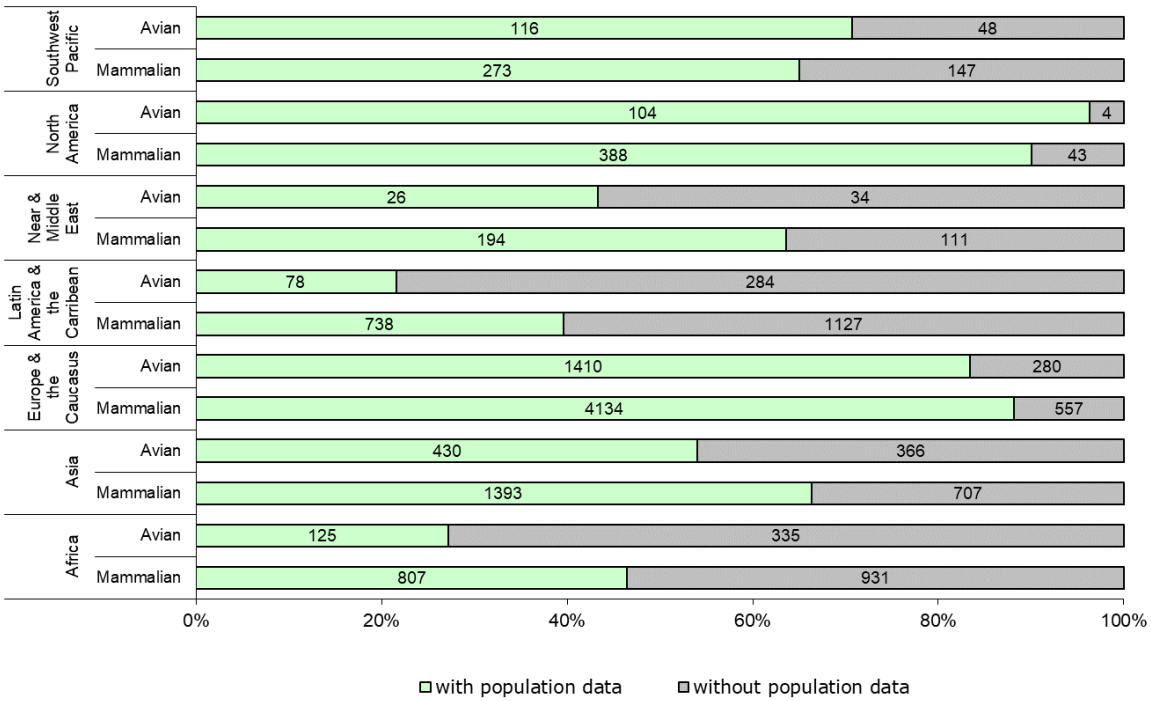
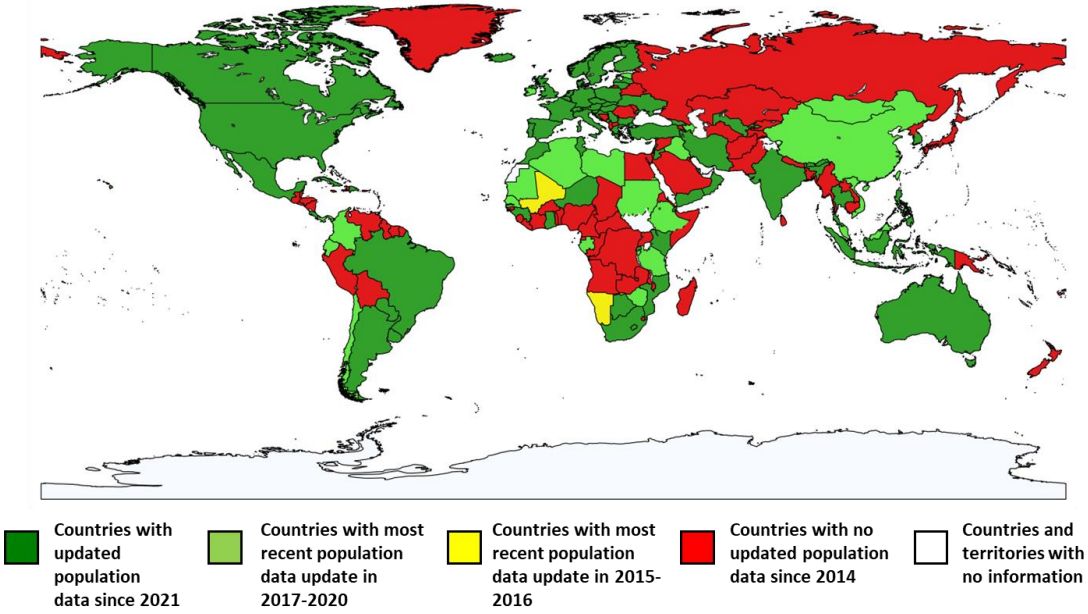


Figure 2. The date of the most recent population updates for each country



Source: United Nations Geospatial. 2020. Map of the World. United Nations. Cited 02 July 2024. 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 June 2024, 7 132 national breed populations (47 percent) remained unclassified by NCs-AnGR with regard to adaptedness (locally adapted versus exotic), compared to 8 243 (54 percent) in 2022, and 9 571 (63 percent) in 2021. Although the proportion of classified breeds has continued to increase (from 37 percent to 53 percent between 2021 and 2024), 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

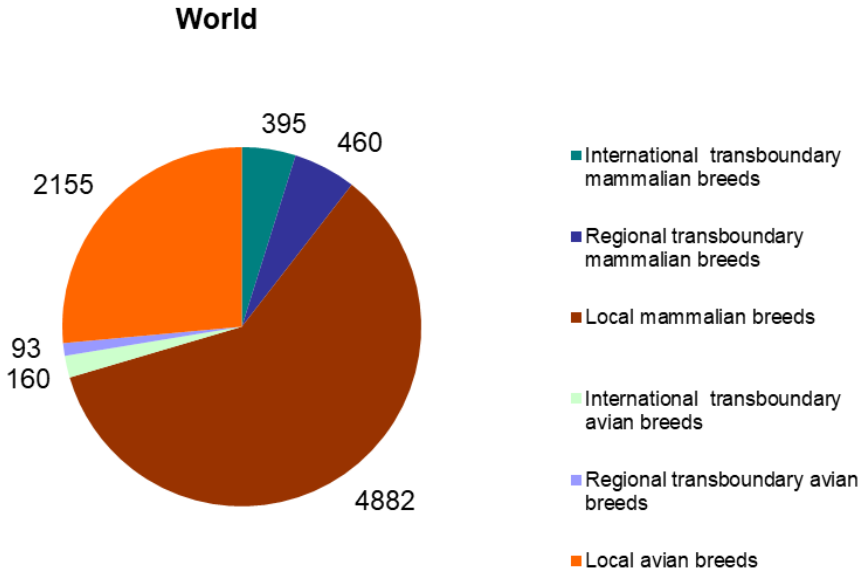
A global total of 8 811 breeds (compared to 8 859 in 2022 and 8 771 in 2021) are recorded; 7 688 are local breeds (reported in only one country) (compared to 7 739 in 2022 and 7 700 in 2021)[10] and 1 123 are transboundary breeds (reported in more than one country) (compared to 1 120 in 2022 and 1 071 in 2021). Among the transboundary breeds, 568 (compared to 564 in 2022 and 513 in 2021) are regional transboundary breeds (reported in only one region) and 555 (compared to 555 in 2022 and 558 in 2021) are international transboundary breeds (reported in more than one region). Presently, 666 breeds (7.5 percent) (compared to 595 in 2022 and 619 in 2021) are classified as extinct, of which 15 are transboundary breeds (compared to nine in 2022 and 11 in 2021). Seven of the extinct breeds are considered cryoconserved only, meaning that they have enough stored genetic material to potentially allow for their future reconstitution. As a rule, extinct breeds were excluded from the analyses undertaken to obtain the results presented in the remaining 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 two to one.

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 the 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).

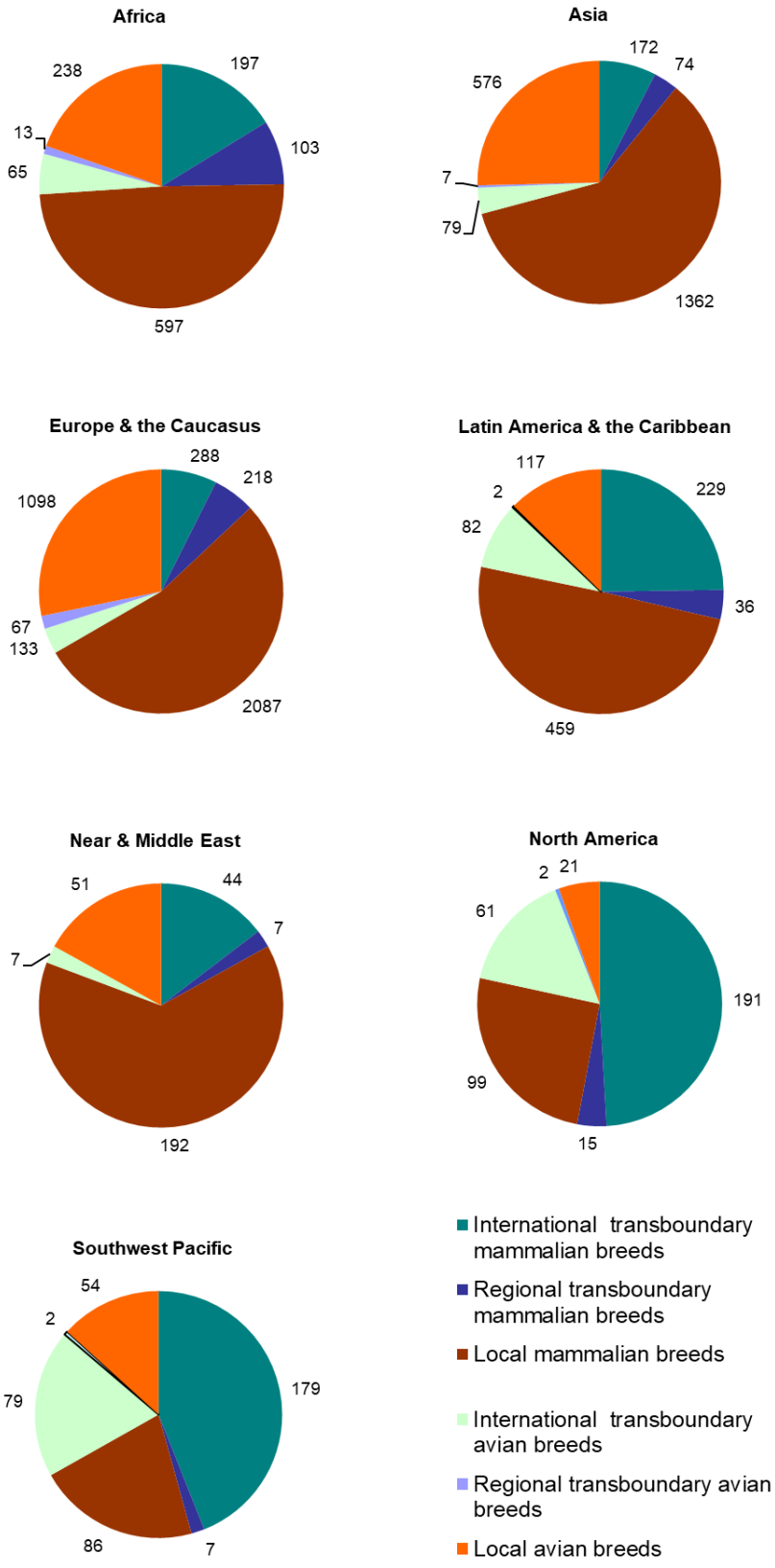
Regional transboundary mammalian breeds are relatively numerous (more than 5 percent of the total number of breeds in the respective region) in Europe and the Caucasus, and Africa. Europe and the Caucasus, with 67 such breeds, is the only region with more than 15 regional transboundary avian breeds.

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



[10] 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 regional level



Note: International transboundary breeds are counted in each region where they occur. Therefore, the global total for this category of breeds 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 numbers 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, for example 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	26	42	46	25	13	6	3	161
Bactrian camel	0	12	2	0	0	0	0	14
Buffalo	3	98	7	9	5	1	1	124
Cattle	190	265	369	144	32	14	24	1038
Dromedary	49	15	1	0	30	0	1	96
Goat	100	223	217	39	38	7	11	635
Guinea pig	4	0	0	13	0	0	0	17
Horse	52	125	377	72	16	25	12	679
Pig	55	236	166	60	1	10	11	539
Rabbit	12	16	197	15	7	8	0	255
Sheep	98	275	599	65	50	21	16	1124
Yak	0	29	2	0	0	1	0	32
Others	8	26	104	17	0	6	7	168
Total	**597**	**1362**	**2087**	**459**	**192**	**99**	**86**	**4882**

Note: Figures exclude extinct breeds. Figures for Alpaca, American bison, deer, dog, dromedary × Bactrian camel, gaur, 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	143	347	741	63	33	11	36	1374
Duck	16	105	105	20	3	1	10	260
Goose	10	45	117	5	2	0	0	179
Muscovy duck	4	8	6	1	1	0	2	22
Pigeon	7	13	40	7	8	1	2	78
Quail	3	23	16	4	0	0	0	46
Turkey	11	11	49	10	2	8	3	94
Others	44	24	24	7	2	0	1	102
Total	**238**	**576**	**1098**	**117**	**51**	**21**	**54**	**2155**

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, rabbits and pigs, Europe and the Caucasus has the largest number of regional transboundary breeds. Africa has more regional transboundary breeds of cattle than any other region. Europe and the Caucasus, however, has by far the most regional transboundary breeds of avian species.

The existence of large numbers of regional transboundary breeds has implications for the 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	0	0	1	0	0	0	0	1
Ass	4	4	4	1	0	0	0	13
Buffalo	1	8	1	1	0	0	0	11
Cattle	40	17	31	10	1	3	1	103
Deer	0	1	1	0	0	0	0	2
Dog	0	0	2	0	0	0	0	2
Dromedary	1	1	0	0	0	0	0	2
Goat	14	12	14	2	3	3	1	49
Guanaco	0	0	0	1	0	0	0	1
Guinea pig	0	0	0	1	0	0	0	1
Horse	9	11	37	5	0	3	0	65
Llama	0	0	0	1	0	0	0	1
Pig	3	2	15	4	0	2	0	26
Rabbit	4	0	32	1	0	0	0	37
Sheep	27	18	80	9	3	4	5	146
Total	**103**	**74**	**218**	**36**	**7**	**15**	**7**	**460**

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	11	2	39	1	0	1	2	56
Duck	0	2	12	0	0	0	0	14
Duck x Muscovy duck	1	0	0	0	0	0	0	0
Goose	0	2	7	0	0	0	0	9
Guinea fowl	0	0	0	1	0	0	0	0
Ostrich	1	0	0	0	0	0	0	0
Pigeon	0	0	2	0	0	0	0	2
Quail	0	1	0	0	0	0	0	1
Turkey	0	0	7	0	0	1	0	8
Total	**13**	**7**	**67**	**2**	**0**	**2**	**2**	**93**

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 chickens 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
Alpaca	2
Ass	4
Bactrian camel	2
Buffalo	4
Cattle	111
Deer	9
Dromedary	2
Goat	38
Horse	70
Llama	1
Pig	33
Rabbit	25
Sheep	94
Total	**396**

Note: Data exclude extinct breeds.

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

Species	Total
Cassowary	1
Chicken	108
Duck (domestic)	11
Emu	1
Goose (domestic)	14
Guinea fowl	4
Muscovy duck	1
Ostrich	3
Pigeon	1
Turkey	16
Total	**160**

Note: Data exclude extinct breeds.

IV. RISK STATUS OF ANIMAL GENETIC RESOURCES

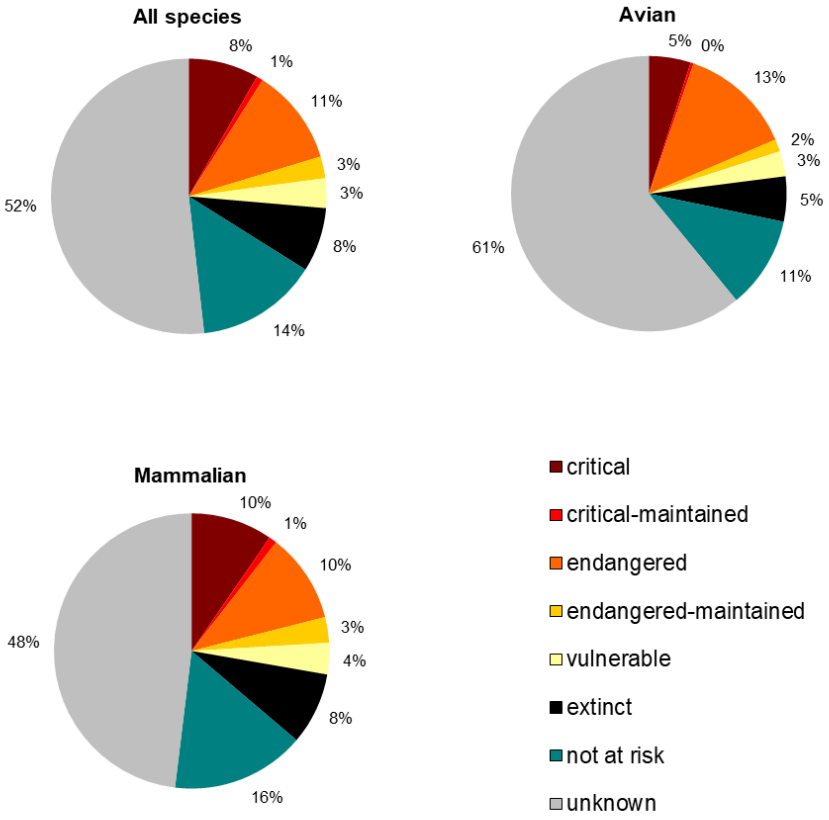
Upon the request of the Commission at its Fourteenth Regular Session, the method for assigning breeds to risk-status categories was amended by the introduction of a cut-off point of ten years, beyond which the risk status of a breed is considered to be unknown if no more recent population data have been reported.[11] The results presented in this section regarding breeds with unknown status are therefore comparable with those presented in the last five reports on the *Status and trends of animal genetic resources* [12,13,14,15,16] but not with earlier versions. With exception of the unknown category, the risk data presented can only be compared with those presented in the status and trends reports from 2018, 2021 and 2022 because, as was noted above, the method now used for risk

[11] CGRFA-14/13/Report, paragraph 29.
[12] CGRFA-15/15/Inf.18.
[13] CGRFA-16/17/Inf.15.
[14] CGRFA-17/19/11.2/Inf.4.
[15] CGRFA-18/21/Inf.5.
[16] CGRFA-19/23/10.2/Inf.2.

classification reflects the FAO guidelines on *In vivo conservation of animal genetic resources*,[17] and this method has only been used in DAD-IS since 2018.

A total of 2 323 breeds are classified as being at risk of extinction (26 percent of all breeds including those that are extinct). The percentage of breeds classified as being of unknown risk status is approximately 52 percent (Figure 4), which represents a slight improvement compared to 2022 (54 percent).

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

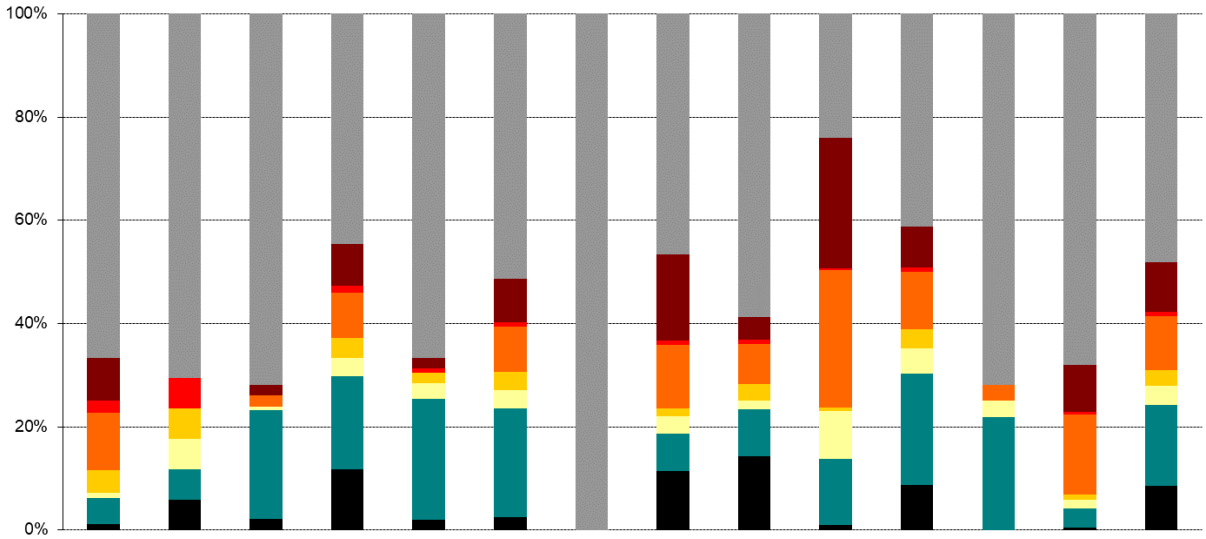


Among mammalian species, sheep, cattle and horses have the largest numbers of breeds at risk. However, rabbits (62 percent), horses (35 percent) and sheep (28 percent) are the species with the largest proportions of breeds at risk. Figure 5 shows the large number of breeds for which no risk-status data are available. This problem is especially notable for particular species, including guinea pig breeds (100 percent), 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 (166) reported as extinct. Large numbers of extinct breeds of sheep (129), horses (105), and pigs (100) are also reported. Some breeds may have become extinct without ever having been documented or reported in DAD-IS.

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 avian breeds have mainly been reported among chickens. A few cases among ducks, geese, muscovy ducks, quail and turkeys have also been reported.

[17] FAO. 2013. In vivo *conservation of animal genetic resources*. FAO Animal Production and Health Guidelines. No. 14. Rome. http://www.fao.org/docrep/018/i3327e/i3327e.pdf

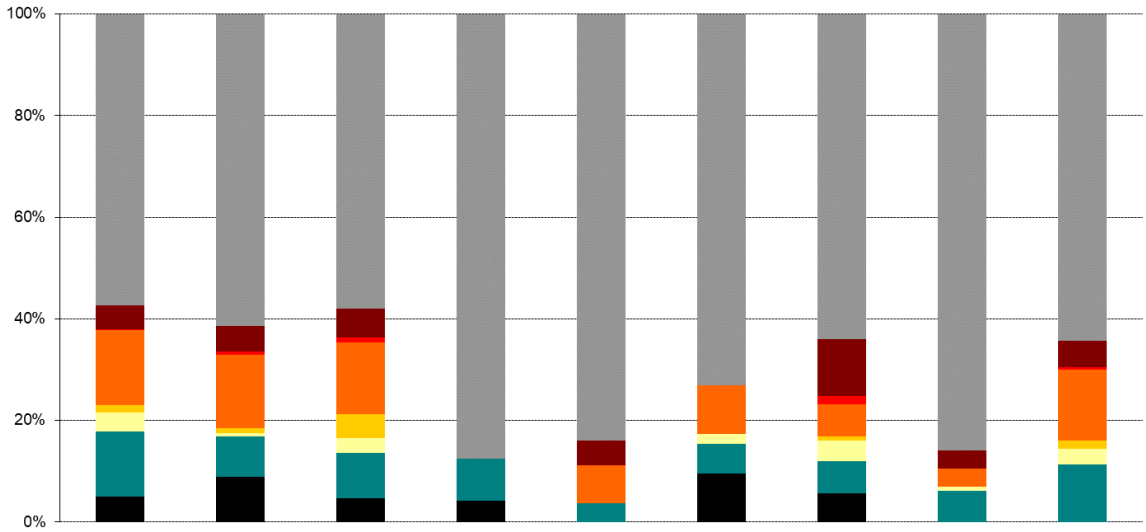
Figure 5. Risk status of the world's mammalian breeds in June 2024: absolute (table) and percentage (chart) figures by species (species refer to both the bar above and numbers below)



	Ass	Bactrian Camel	Buffalo	Cattle	Dromedary	Goat	Guinea pig	Horse	Pig	Rabbit	Sheep	Yak	Other*	Total
Unknown	120	12	102	632	68	380	18	428	410	77	615	23	128	3013
Critical	15	0	3	116	2	63	0	153	31	81	120	0	17	601
Critical-maintained	4	1	0	19	1	6	0	8	6	1	11	0	1	58
Endangered	20	0	3	124	0	65	0	113	54	85	166	1	29	660
Endangered-maintained	2	1	1	50	3	26	0	31	12	30	72	1	3	232
Vulnerable	8	1	0	55	2	26	0	14	22	2	56	0	2	188
Not at risk	9	1	30	256	24	156	0	67	63	41	324	7	7	985
Extinct	2	1	3	166	2	19	0	105	100	3	129	0	1	531
Total	**180**	**17**	**142**	**1418**	**102**	**741**	**18**	**919**	**698**	**320**	**1493**	**32**	**188**	**6268**

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

Figure 6. Risk status of the world's avian breeds in June 2024: absolute (table) and percentage (chart) figures by species (species refer to both the bar above and numbers below)



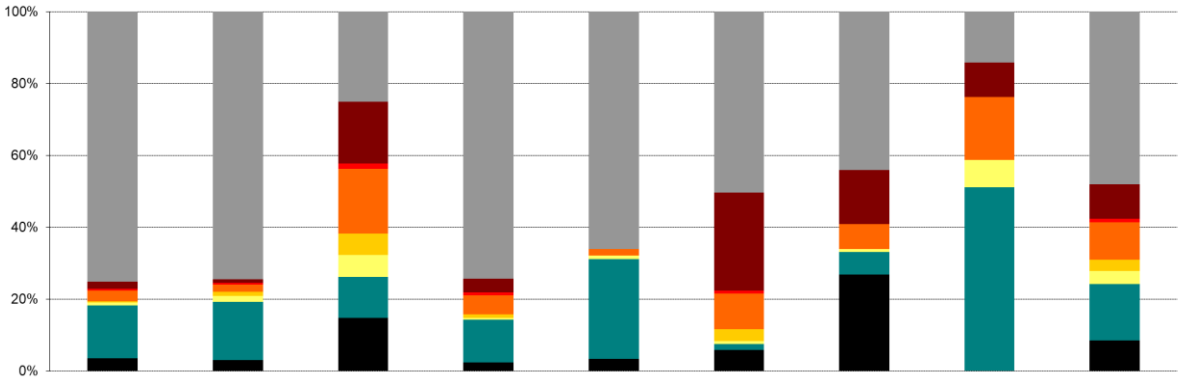
	Chicken	Duck	Goose	Muscovy duck	Pigeon	Quail	Turkey	Other*	Total
Unknown	930	192	123	21	68	38	80	98	1550
Critical	75	16	12	0	4	0	14	4	125
Critical-maintained	3	2	2	0	0	0	2	0	9
Endangered	240	45	30	0	6	5	8	4	338
Endangered-maintained	60	2	6	0	0	1	5	1	75
Vulnerable	23	3	10	0	0	0	1	0	37
Not at risk	207	25	19	2	3	3	8	7	274
Extinct	82	28	10	1	0	5	7	2	135
Total	**1620**	**313**	**212**	**24**	**81**	**52**	**125**	**116**	**2543**

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

Figures 7 and 8 show the distributions of breeds at risk by region for mammalian and avian species, respectively. The regions can be divided into two groups. In Europe and the Caucasus, North America and the Southwest Pacific (mainly because of Australia, which has a much larger number of recorded breeds than any other country in the region, see Appendix 2), the risk status of the majority of breeds is known. Among this majority, most breeds are at risk of extinction. These are the regions with the most specialized livestock production systems, dominated by a rather small number of highly specialized breeds. The second group comprises all other regions. In this group, the risk status of the majority of breeds is unknown. Among the minority of breeds whose risk status is known, the majority are classified as not at risk.

Tables 8 and 9 present the numbers of extinct mammalian and avian breeds by species and region. The number of breeds reported to be extinct increased significantly between 2022 and 2024, from 595 to 666. Countries such as Australia and France have reported a substantial number of extinct breeds since 2022 (35 breeds each), while some other breeds recorded as extinct were removed as a result of corrections to countries' inventories. The Europe and the Caucasus region has far more mammalian and avian breeds reported as extinct than any other region: 76 percent of the extinct mammalian breeds and 89 percent of avian breeds are reported from this region. The predominance of Europe and the Caucasus in the number of breeds reported as extinct may be partly due to the relatively advanced state of breed inventories and monitoring in this region, as well as to specific socioeconomic factors influencing breed development. The species with the largest numbers of breeds recorded as extinct are cattle (166), sheep (129), horse (105), pig (100) and chicken (82). In the latter two cases, extinct "breeds" include many industrial lines that are no longer maintained and actively bred. The year of extinction has been reported for only 63 percent of cases (417). A total of 315 breeds have become extinct since 2000 (Table 10), which means that, on average, one livestock breed has become extinct each month in the twenty-first century.

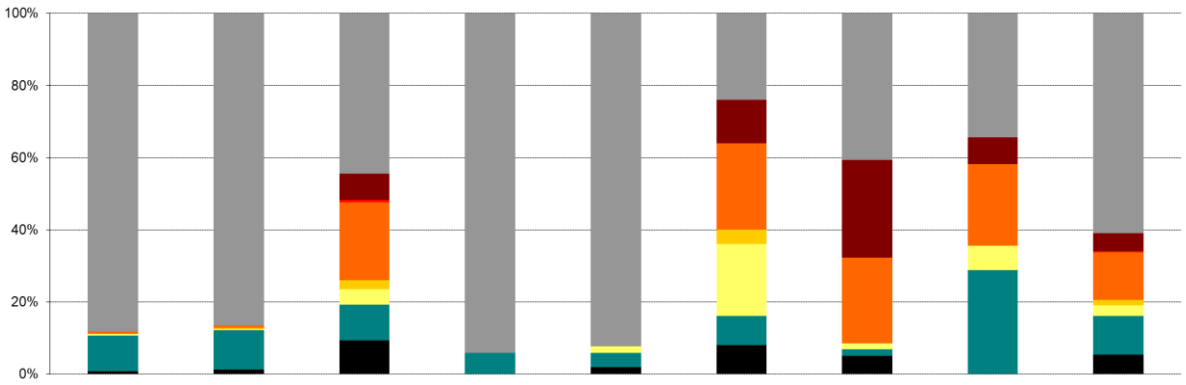
Figure 7. Risk status of the world's mammalian breeds in June 2024: absolute (table) and percentage (chart) figures by region and for international transboundary breeds



	Africa	Asia	Europe & the Caucasus	Latin America & the Caribbean	Near & Middle East	North America	Southwest Pacific	International transboundary breeds	World
Unknown	545	1103	679	377	136	61	56	56	3013
Critical	15	14	463	19	0	33	19	38	601
Critical-maintained	4	7	42	4	0	1	0	0	58
Endangered	21	29	489	27	4	12	9	69	660
Endangered-maintained	3	17	159	5	0	4	0	0	188
Vulnerable	6	25	164	3	2	1	1	30	232
Not at risk	106	241	309	60	57	2	8	202	985
Extinct	26	44	401	12	7	7	34	0	531
Total	**726**	**1480**	**2706**	**507**	**206**	**121**	**127**	**395**	**6268**

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 June 2024: 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	223	511	571	112	48	6	24	55	1550
Critical	0	0	94	0	0	3	16	12	125
Critical-maintained	0	0	9	0	0	0	0	0	9
Endangered	2	4	276	0	0	6	14	36	338
Endangered-maintained	0	3	33	0	0	1	0	0	37
Vulnerable	1	1	55	0	1	5	1	11	75
Not at risk	25	64	127	7	2	2	1	46	274
Extinct	2	7	120	0	1	2	3	0	135
Total	**253**	**590**	**1285**	**119**	**52**	**25**	**59**	**160**	**2543**

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

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	0	0	1	0	1	0	0	2
Bactrian camel	0	0	1	0	0	0	0	1
Buffalo	0	0	3	0	0	0	0	3
Cattle	18	19	110	8	5	0	6	166
Dromedary	1	0	0	0	0	0	1	2
Dromedary×Bactrian Camel	0	0	0	0	0	0	1	1
Goat	1	2	13	0	0	0	2	18
Horse	6	1	87	2	0	5	4	105
Pig	0	16	82	1	0	0	1	100
Rabbit	0	0	2	1	0	0	0	3
Sheep	0	6	101	0	1	2	19	129
Total	**26**	**44**	**401**	**12**	**7**	**7**	**34**	**531**

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	75	0	1	0	0	82
Duck	0	0	28	0	0	0	0	28
Goose	0	0	8	0	0	0	2	10
Guinea fowl	2	0	0	0	0	0	0	2
Muscovy duck	0	1	0	0	0	0	0	1
Quail	0	0	5	0	0	0	0	5
Turkey	0	0	4	0	0	2	1	7
Total	**2**	**7**	**120**	**0**	**1**	**2**	**3**	**135**

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

Year	Number of breeds	Proportion (%)
Unspecified	249	37
1900 and before	8	1
1901–2000	94	14
2001–2010	67	10
2011–2020	118	18
after 2020	130	20
Total	**666**	**100**

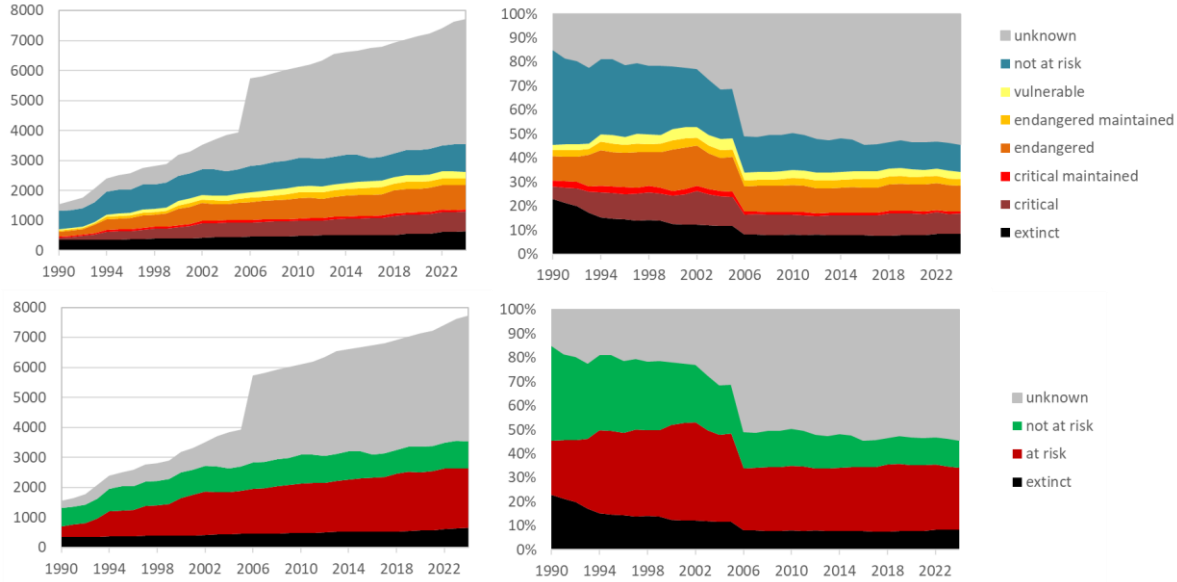
V. TRENDS IN BREED STATUS

The data presented in Figure 9 show the evolution of risk status of local breeds for the period 1990 to 2024. During this period, the number of extinct breeds increased. A steep increase in the total number of breeds in 2006 is linked to the 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 breeds being recorded in DAD-IS for the first time. However, relatively few of those breed records were accompanied by information on population size, resulting in a sharp increase in the proportion of local breeds with unknown risk status and a decrease in the proportion of extinct breeds. The situation has been relatively stable since then, with the proportion of local breeds (considering extinct breeds in the total) of unknown risk status increasing slightly from 52 percent to 54 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 sizes in DAD-IS has gradually increased, from 24 in 2008 to 47 for the first half of 2024 alone. However, the increase in data entry activity is not necessarily reflected in the proportion of breeds with known risk status because (among other reasons) some new breeds are inserted without population data and numerous breeds reach the ten-year cut-off point each year (91 local breeds in 2024) and thus move into the unknown risk status category.

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.

VI. PERFORMANCE DATA

DAD-IS provides the opportunity to store information on many of the characteristics of national breed populations. Most of these characteristics are performance traits, and they may be of qualitative (such as wool type) or quantitative (such as number of eggs) nature. In this section, the reporting rates for breed performance data (a total of 46 data fields) are summarized. Context-related fields, such as those describing the type of management system in which the performance is measured, are not considered. Of the 15 189 national breed populations recorded in DAD-IS, only 4 174 (27 percent), spread over a total of 31 species, have any performance data recorded.

Most of the national breed populations with some recorded performance data (82 percent) belong to the five most popular livestock species: 28 percent are sheep breeds; 19 percent are cattle breeds; 17 percent are chicken breeds; 11 percent are goat breeds; and 7 percent are pig breeds. The

[18] FAO. 2007. *The State of the World's Animal Genetic Resources for Food and Agriculture,* edited by Barbara Rischkowsky & Dafydd Pilling. Rome. http://www.fao.org/docrep/010/a1250e/a1250e00.htm
[19] FAO. 2018. Risk assessment plan for the control of Foot-and-Mouth disease. Rome. https://openknowledge.fao.org/handle/20.500.14283/ca1404en

performance data that can be reported varies from species to species. The maximum numbers of performance data fields that can be filled for a given national breed population per species is 36 for cattle, 42 for sheep, 42 for goats, 19 for pigs and 23 for chickens. There are big differences between regions in the completeness of reporting for these species (Figure 10). Overall, the reporting rate is highest in Asia, followed by Europe and the Caucasus, and lowest in the Southwest Pacific.

Breaking down the figures by region and species shows that the completion rate is highest for pig breeds in Asia, for which more than 13 percent of the performance data fields have been completed. The reporting rate for sheep breeds is comparatively high in most regions, but exceeds 10 percent only in Asia and the Near and Middle East. The reporting rate for chickens was generally low in all regions. In some regions, no data are reported for pigs. This could be because of the scarcity of this species in certain regions due to religious and cultural factors, for example in the Near and Middle East. However, performance data for pigs are also not reported in North America or the Southwest Pacific. For chickens and pigs, the lack of reporting in some regions could be related to phenotypic data being predominantly owned by private companies and thus not easily available to the public. The generally higher reporting rate for sheep could be partly a consequence of the fact that some wool-specific characteristics are simple to capture.

When ranked by percentage of reporting, the 20 most reported trait–species combinations include three species only: sheep, chicken and cattle (Figure 11). The four trait-species combinations with the highest percentage completion are "wool or hair–sheep" (52 percent), "wool type–sheep" (3 percent), "average number of eggs per year–chicken" (25 percent) and "average litter size–sheep" (24 percent). These traits are rather easy and inexpensive to assess when compared to less frequently reported traits that need specific measuring procedures and/or equipment, such as carcass weight or dressing percentage. Birth weights of cattle and sheep are also reported with relatively high frequency, which may suggest that measurement of this trait may be a routine procedure for many breeds of these species in many countries.

Figure 10. Completeness (%) of reporting on performance traits for the five most used livestock species by region (number of data fields considered shown in brackets)

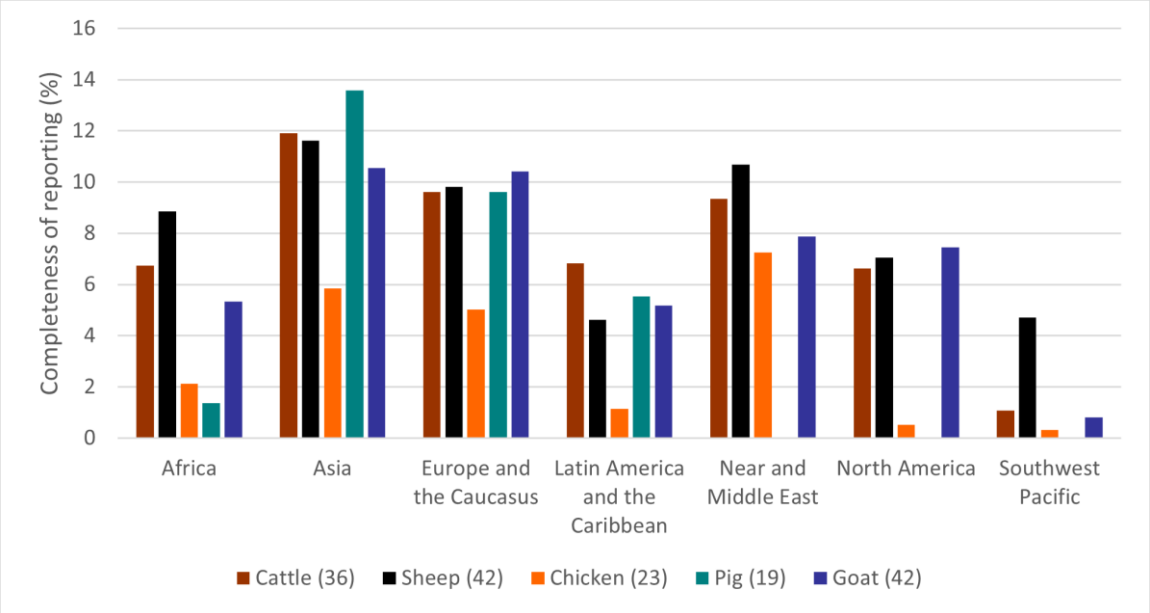
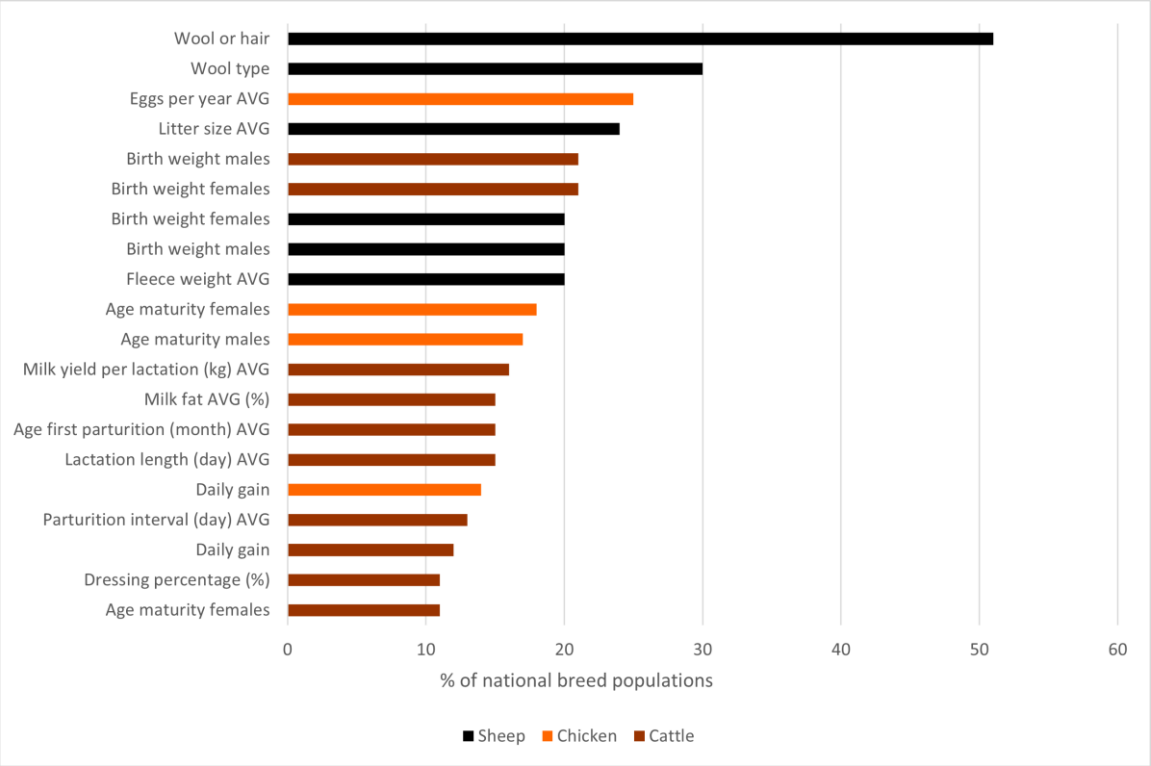


Figure 11. The 20 performance trait–species combinations with the highest levels of reporting, and the percentage of global national breed populations with information present in DAD-IS in each case

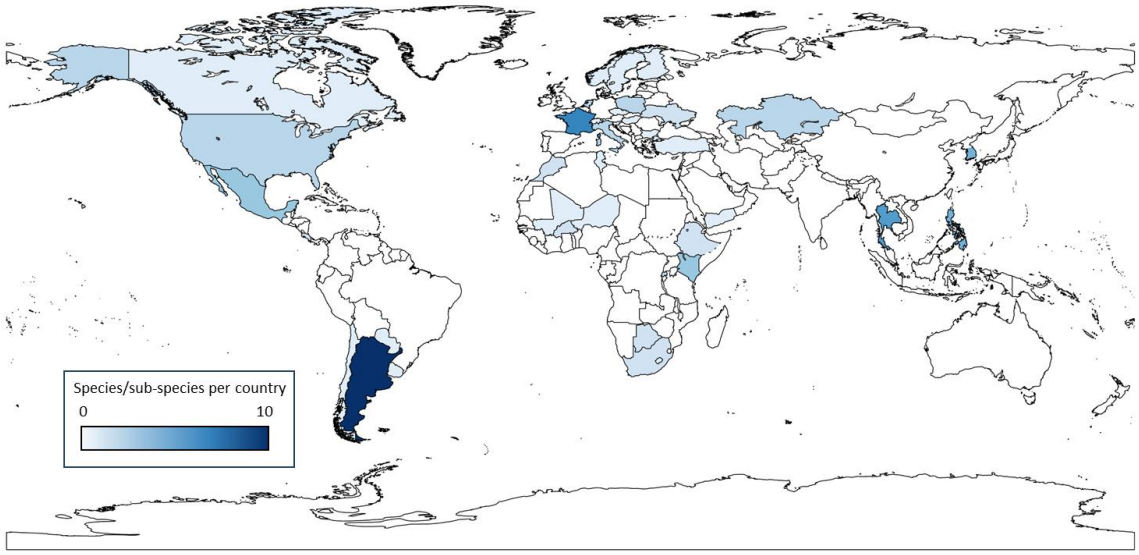


VII. STATE OF REPORTING FOR MANAGED BEE POPULATIONS

Since the end of 2020, DAD-IS has allowed the entry of data on managed bees for food and agriculture in a specific data-entry module. As of June 2024, 38 countries had submitted data for 91 species and subspecies (compared to 25 countries in 2022).[20] Of these countries, 21 have submitted 126 data entries on the number of colonies for 46 species and subspecies, including some time-series data provided by Bulgaria, Chile, Czechia, Italy, Poland, Slovenia, Tunisia and Ukraine. The current amount and geographical coverage of data are nevertheless not yet sufficient to inform the development of regional or international policies and strategies to conserve the genetic diversity of managed bees.

[20] CGRFA/WG-AnGR-12/23/4.

Figure 10. Nubmers of managed bee species and subspecies recorded by countries in DAD-IS



Source: United Nations Geospatial. 2020. Map of the World. United Nations. Cited 02 July 2024. 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.

VIII. 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 SDGs and 169 targets.[21] 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 relevant regional and international organizations and agencies. The Report of the IAEG-SDG from February 2016[22] invited the UNSC to adopt, under SDG Target 2.5, two indicators directly addressing animal genetic resources for food and agriculture.

Target 2.5 is worded as follows: "*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).[23] 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

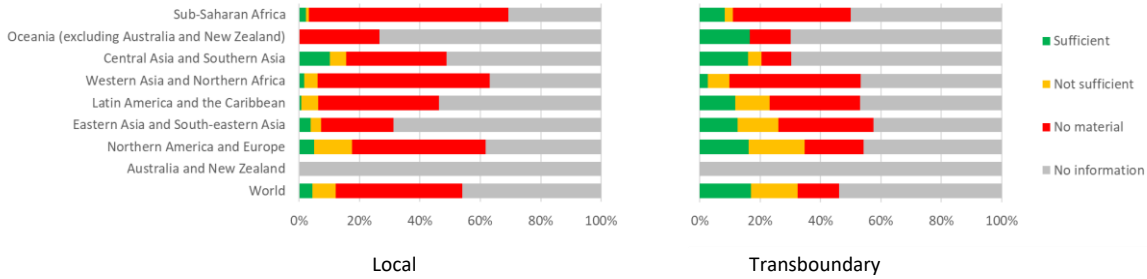
(ii) SDG Indicator 2.5.2: Proportion of local breeds, classified as being at risk, not-at risk or unknown level of risk of extinction.

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

[21] https://sustainabledevelopment.un.org/
[22] E/CN.3/2016/2/Rev.1.
[23] http://undocs.org/A/RES/71/313

indicator initially considered only local breeds, but since 2023 information on transboundary breeds has been reported as well. The information in DAD-IS (Figure 10) is still far from complete, with cryoconservation status known for only 54 percent of local breeds (54 percent in 2022, 4 percent in 2018) and 46 percent of transboundary breeds (not reported in earlier years). The figures underline the substantial progress countries have made since 2018 in reporting information on cryoconservation to DAD-IS.[24] When expressed at the national breed population level, the reporting rate is 55 percent. When corresponding national transboundary breed populations are merged together, the status of a substantial proportion of transboundary breeds from developing countries remains unknown. Some genetic material is cryoconserved for only a small proportion of local (12 percent) and transboundary (32 percent) breeds, and for only around 4 percent of local breeds and 17 percent of transboundary breeds is the quantity of stored material considered to be sufficient for breed reconstitution in the event of extinction.

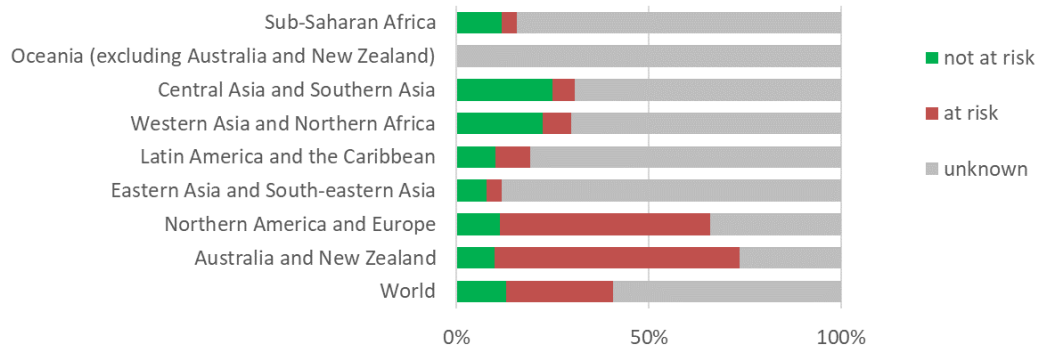
Figure 10. Sustainable Development Goal Indicator 2.5.1b the on the proportions (%) of local and transboundary breeds with material stored in a cryobank by region[a]



Note: Figure is based on the SDG regional classification.

Results for SDG Indicator 2.5.2 are presented in Figure 11. Across the world, if extinct breeds are excluded, 59 percent of local breeds are classified as having unknown risk status, 28 percent as at risk, and 13 percent as not at risk. This result differs from the proportions obtained when considering local and transboundary breeds together (Figure 4) because many transboundary breeds are not at risk. Results also differ widely across regions. For example, in the Oceania region (excluding Australia and New Zealand), 100 percent of local breeds are currently of unknown risk status. In all regions except Northern America and Europe, more than 69 percent of local breeds are of unknown risk status. In Northern America and Europe, 34 percent of local breeds have unknown risk status, 55 percent are considered at risk and 11 percent are considered not at risk. Note that at the request of countries, and depending on the approval by the IAEG-SDG, data on transboundary breeds are expected to be included in the next round of reporting for SDG Indicator 2.5.2.

Figure 11. Sustainable Development Goal Indicator 2.5 on the proportions (percent) of local breeds classified as being at risk, not at risk or of unknown risk of extinction[a]



Note: Figure is based on the SDG regional classification.

[24] CGRFA/WG-AnGR-11/21/Inf.5.

IX. CONCLUSIONS

Between September 2022 and June 2024 the coverage of the Global Databank increased slightly, mainly as a result of the efforts made by several countries in the context of the data collection process for the *Third Report on the State of Animal Genetic Resources for Food and Agriculture*. Breed-related information, however, still remains far from complete, especially for Western and Central Africa, and Central Asia. For 52 percent of all reported breeds, extinction risk status is unknown because of missing population data or a lack of recent updates.

Despite improvements in the updating of some data categories, such as "adaptedness" and cryconservation data, substantial data gaps remain. Data on the adaptedness breed classification (i.e. locally adapted versus exotic) are still missing for 47 percent of national breed populations. Therefore, figures and tables based on this classification system have once again not been prepared for this report. Breeds can usually be classified for adaptedness based on local knowledge, without the need for costly data-collection processes. Thus, the high proportion of missing information in this category implies that there is a need for NCs-AnGR to pay more attention to providing easily available breed data.

The quantity of data in DAD-IS on the cryoconservation status of national breed populations increased slightly during the reporting period, from 54 percent in 2022 to 55 percent in 2024. Even with these sparse data, SDG Indicator 2.5.1b reveals that cryoconservation efforts need to be strengthened, especially for local breeds, as currently only 12 percent of such breeds are reported to have genetic material stored in a gene bank. Cryoconservation is a powerful tool both for ensuring a population is safe from extinction and for the management of genetic diversity *in situ*.[25]

Explicit reporting on the proportions of local breeds classified as at risk of extinction, not at risk or of unknown risk status is an inherent part of status and trends reports, and links these reports directly to SDG Indicator 2.5.2. These data, whether taken alone or in combination with SDG Indicator 2.5.1b, show that the situation for local breeds is still dramatic. First, for 59 percent of local breeds no population size data have been reported within the last ten years. This large data gap somewhat obscures the overall situation with respect to breed risk status. Considering only the local breeds for which information is provided, more than 68 percent are classified as at risk. Moreover, for only a small proportion of these local breeds is cryoconserved material reported to exist. In addition, the rate of breed extinctions has been increasing. An average of one breed has been lost every month in the first two decades of the twenty-first century.

Since 2020, when the module for entering data on managed bees for food and agriculture was made available, only 38 countries have entered such data, emphasising the need to step up reporting and make DAD-IS a valuable tool for the global monitoring of managed bee populations.

DAD-IS is the authorized information system for monitoring the livestock diversity aspects of SDG Target 2.5 in addition to serving its long-term purpose as the Convention on Biological Diversity Clearing House Mechanism for information on the diversity of animal genetic resources for food and agriculture. The continuous improvement of the system in terms of its user friendliness and the implementation of data fields that support meaningful monitoring of animal genetic resources for food and agriculture must go hand in hand with the provision of data.

[25] 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. https://doi.org/10.4060/cc3078en

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

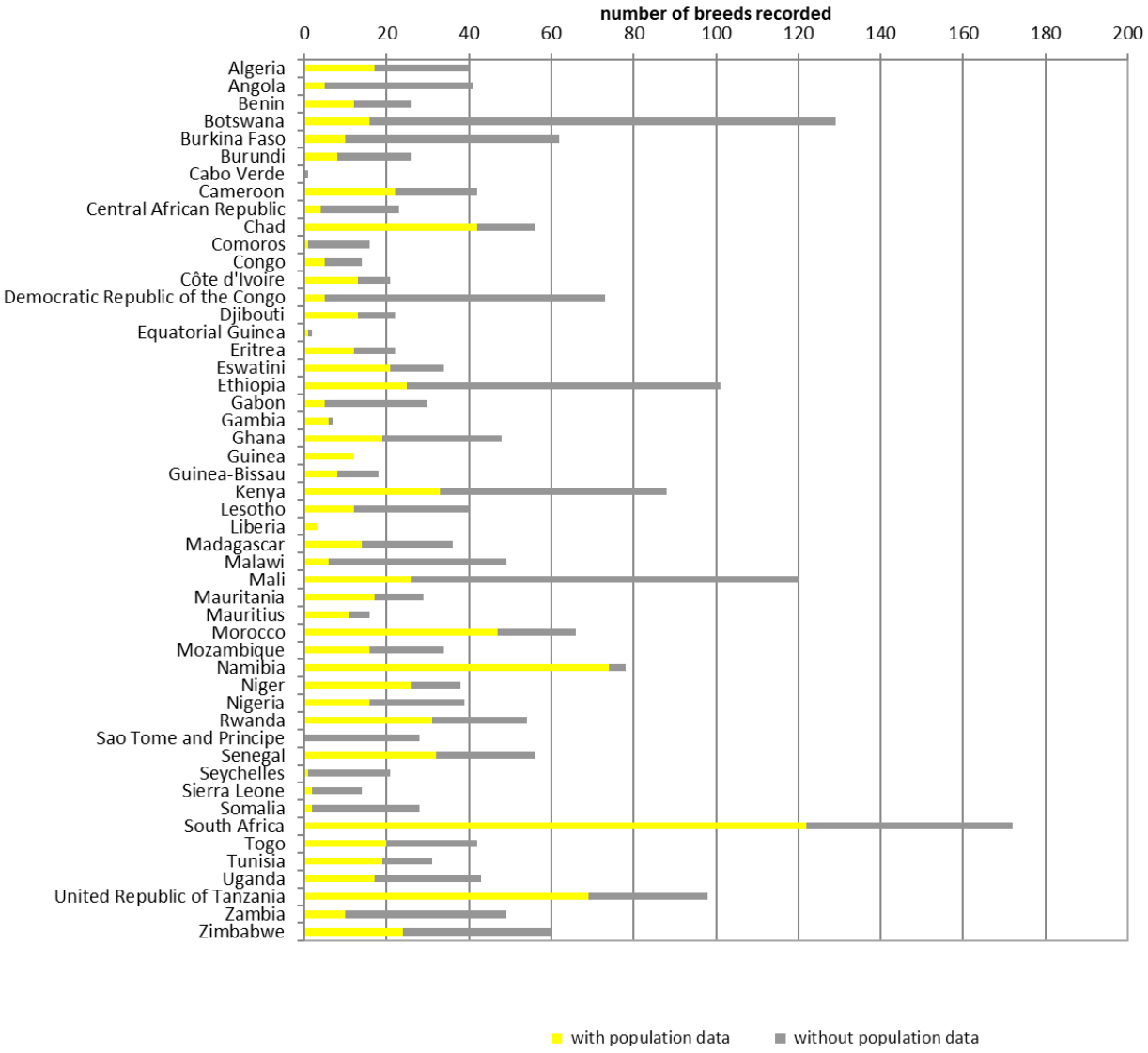
1.1. Africa
1.2. Asia
1.3. Europe and the Caucasus
1.4. Latin America and the Caribbean
1.5. Near and Middle East
1.6. North America
1.7. Southwest Pacific

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.

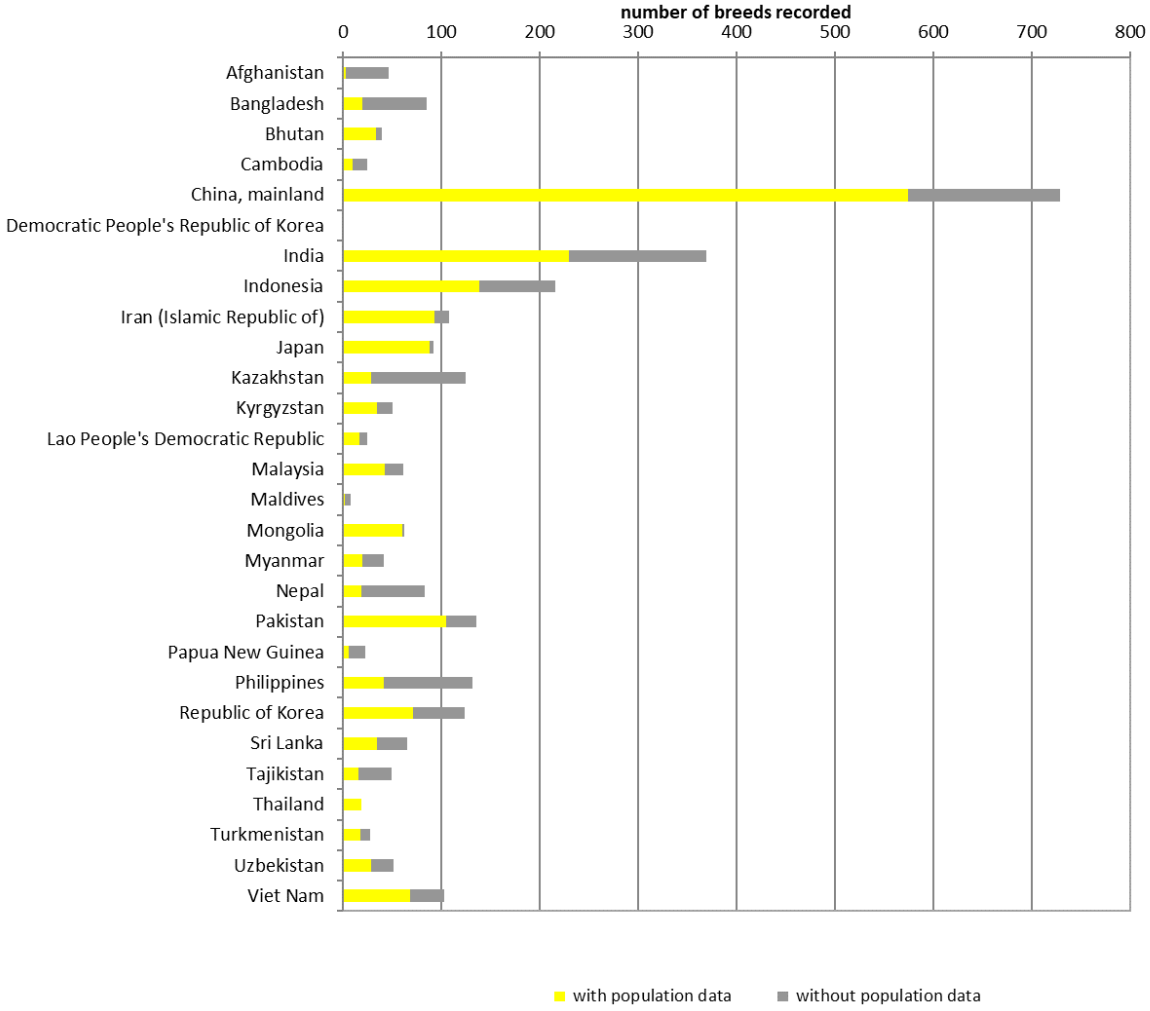
The graphics show the number of breeds for which population data have been recorded and the number of breeds included in DAD-IS for which no population data have yet been recorded, by country and territory. Dependent territories are listed below the respective country.

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.

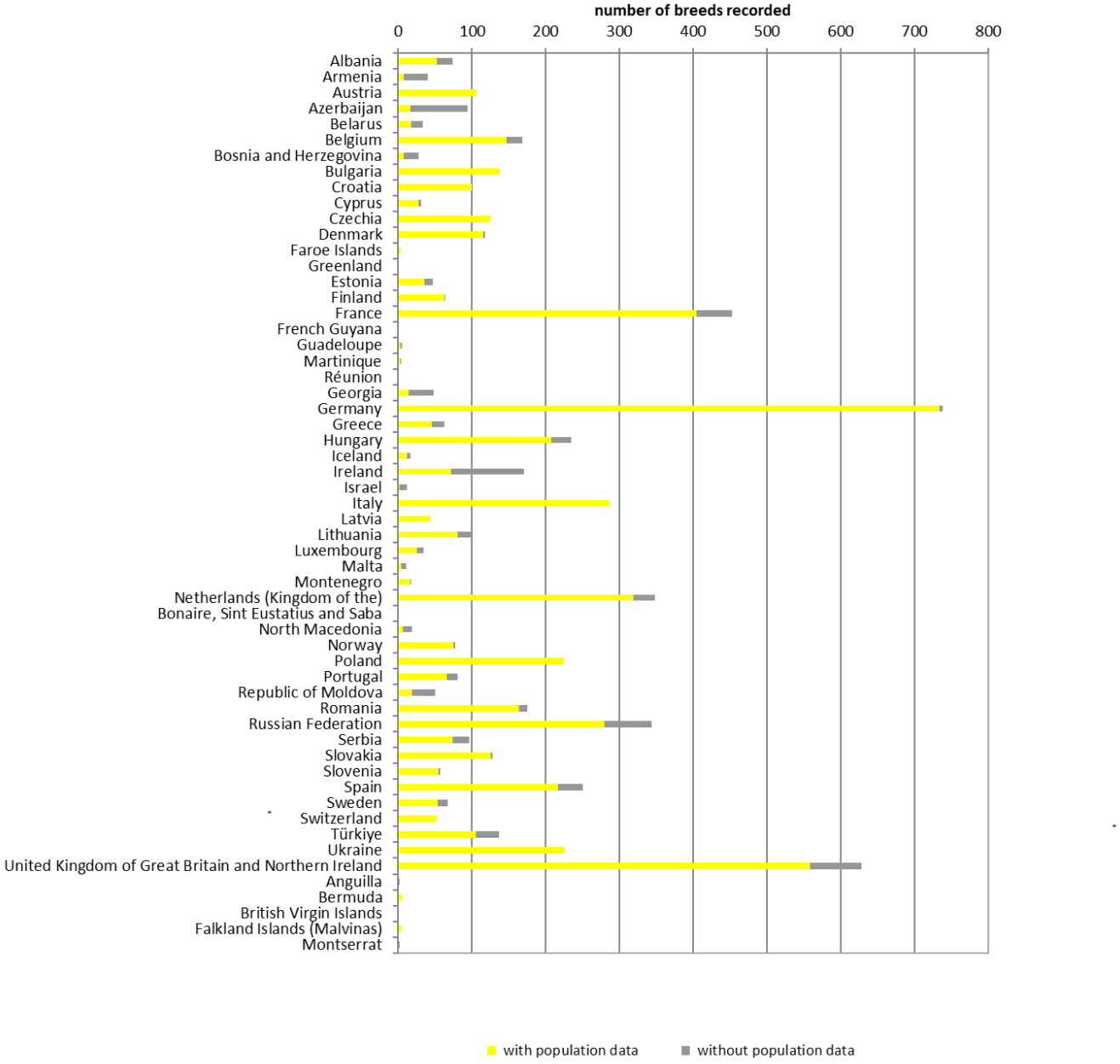
1.1 Africa


number of breeds recorded
0
20
40
60
80
100
120
140
160
180
200
Algeria
Angola
Benin
Botswana
Burkina Faso
Burundi
Cabo Verde
Cameroon
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

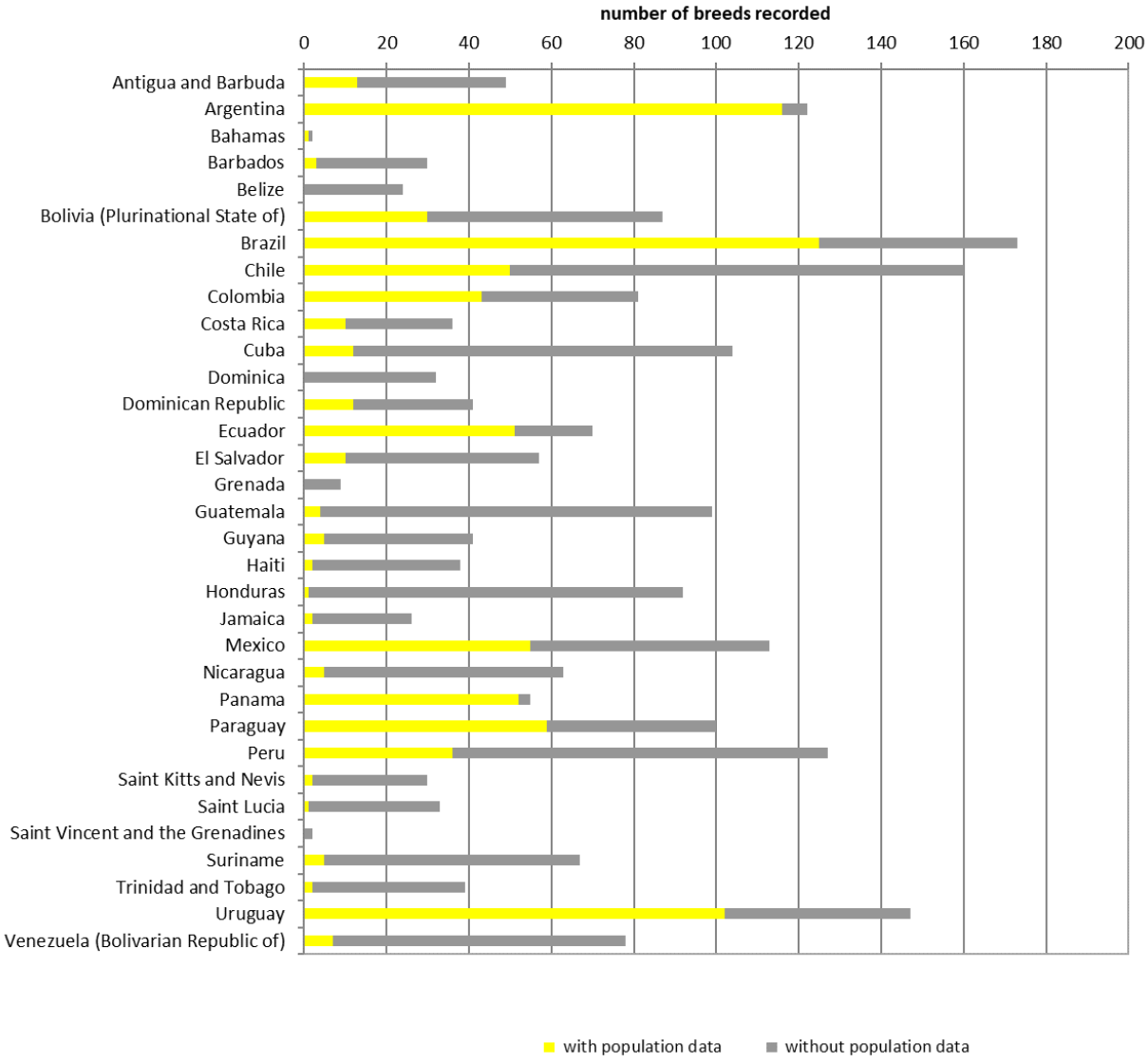

number of breeds recorded
0
100
200
300
400
500
600
700
800
Afghanistan
Bangladesh
Bhutan
Cambodia
China, mainland
Democratic People's Republic of Korea
India
Indonesia
Iran (Islamic Republic of)
Japan
Kazakhstan
Kyrgyzstan
Lao People's Democratic Republic
Malaysia
Maldives
Mongolia
Myanmar
Nepal
Pakistan
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



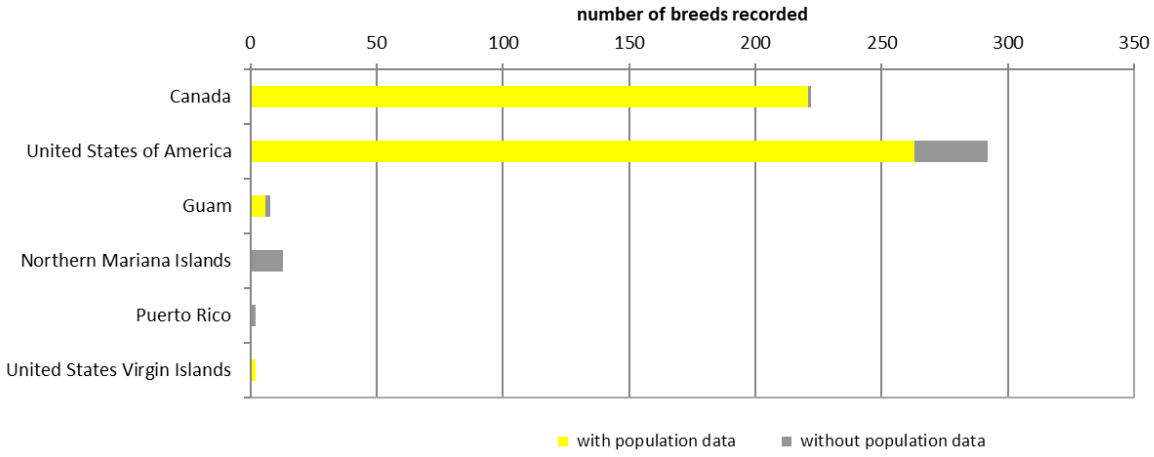
*A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas). (Editorial directive ST/CS/SER.A/42, United Nations Secretariat, 3 August 1999).

1.4 Latin America and the Caribbean

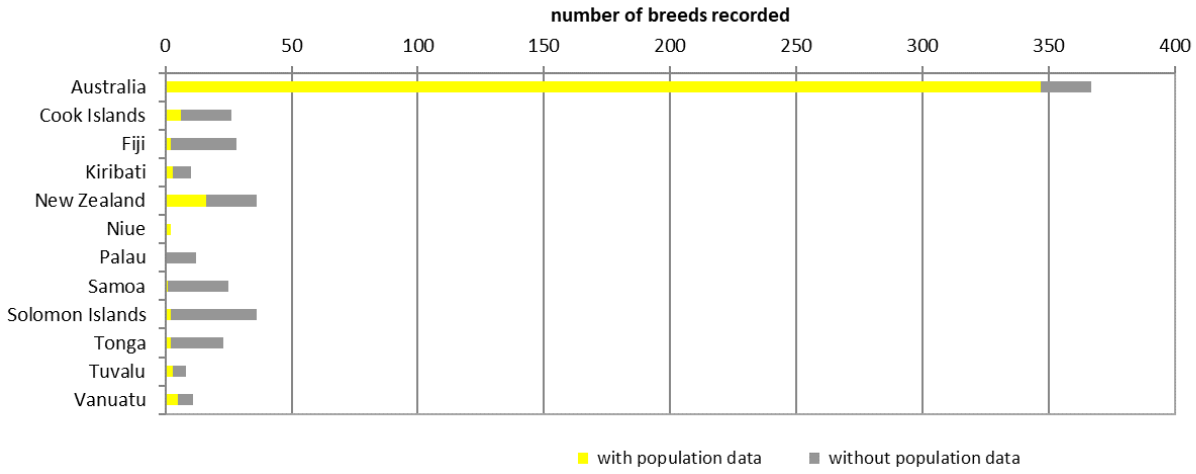


1.5 Near and Middle East

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	Unknown	At risk	Not at risk	Unknown	At risk	Not at risk	Unknown	
Africa	49	103	682	7	22	88	58	150	57	1 216
Asia	88	236	1 560	5	15	57	57	108	88	2 214
Europe and the Caucasus	1 738	364	1 220	133	50	103	153	183	95	4 039
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	**2 011**	**813**	**4329**	**165**	**94**	**296**	**184**	**228**	**144**	**8 264**

2.1 Africa	Local			Regional			International			Total
Country	At risk	Not at risk	Unknown	At risk	Not at risk	Unknown	At risk	Not at risk	Unknown	
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	Unknown	At risk	Not at risk	Unknown	At risk	Not at risk	Unknown	
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	Unknown	
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	0	0	43	0	0	3	0	25	1	72
Armenia	0	0	13	0	0	8	2	13	2	38
Austria	19	3	0	5	10	0	4	39	0	80
Azerbaijan	0	3	51	0	2	10	0	22	0	88
Belarus	0	0	15	0	0	3	2	8	1	29
Belgium	11	0	58	2	10	4	12	60	0	157
Bosnia and Herzegovina	0	0	19	0	1	0	2	3	0	25
Bulgaria	68	17	0	1	0	0	4	33	0	123
Croatia	34	10	2	0	2	1	9	35	0	93
Cyprus	3	0	14	0	0	1	1	10	1	30
Czechia	41	2	0	6	7	0	11	50	0	117
Denmark	44	4	4	2	5	0	12	43	1	115
Faroe Islands	1	1	0	0	0	0	0	1	0	3
Greenland	0	0	1	0	0	0	0	0	0	1
Estonia	1	0	10	0	0	3	4	22	6	46
Finland	15	4	0	1	2	2	2	31	5	62
France	103	18	118	14	14	5	27	82	3	384
French Guyana	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	40	0	0	4	0	0	0	44
Germany	408	55	28	26	25	6	47	84	3	682
Greece	20	13	4	0	1	0	1	20	0	59
Hungary	61	50	43	2	5	5	7	49	7	229
Iceland	3	3	4	0	1	0	0	5	0	16
Ireland	5	0	33	0	2	16	35	60	10	161
Israel	0	0	3	0	0	1	0	4	4	12
Italy	201	19	0	5	7	0	9	37	0	278
Latvia	17	1	0	1	0	0	0	23	0	42
Lithuania	21	2	6	3	5	3	10	44	1	95
Luxembourg	0	0	5	0	1	1	3	24	0	34
Malta	1	0	2	0	1	0	0	7	0	11
Montenegro	11	1	1	0	1	0	0	4	0	18
Netherlands (Kingdom of the)	43	5	36	20	22	11	49	112	8	306
Bonaire, Sint Eustatius and Saba	0	0	0	0	0	0	0	0	0	0
North Macedonia	0	0	7	0	1	1	0	10	0	19
Norway	36	6	4	0	1	0	4	25	0	76
Poland	100	17	8	3	7	0	4	43	0	182
Portugal	30	21	5	1	2	0	0	21	0	80
Republic of Moldova	0	0	17	0	1	3	4	17	5	47
Romania	0	0	93	5	1	9	12	28	3	151
Russian Federation	0	0	178	1	1	26	14	42	16	278
Serbia	9	2	9	0	13	0	8	47	3	91
Slovakia	16	3	4	12	7	1	13	54	0	110
Slovenia	23	2	1	0	0	0	1	22	0	49
Spain	106	49	50	1	3	0	3	22	0	234

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	
Sweden	45	3	15	1	0	1	0	1	0	66
Switzerland	18	8	0	3	2	1	1	9	0	42
Türkiye	15	38	29	0	3	1	2	16	1	105
Ukraine	39	11	1	3	2	6	15	51	8	136
United Kingdom of Great Britain and Northern Ireland	86	12	167	6	8	30	87	116	15	527
Anguilla	0	0	0	0	0	0	0	1	1	2
Bermuda	0	0	2	0	0	1	0	2	0	5
British Virgin Islands	0	0	1	0	0	0	0	0	0	1
Falkland Islands (Malvinas)	0	0	3	0	0	0	0	1	0	4
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	32	3	49
Argentina	12	11	10	0	2	0	5	80	0	120
Bahamas	0	0	1	0	0	0	1	0	0	2
Barbados	0	0	6	0	0	0	3	20	1	30
Belize	0	0	2	0	1	1	1	19	0	24
Bolivia (Plurinational State of)	0	0	26	0	0	5	6	45	5	87
Brazil	15	7	36	0	2	0	22	83	6	171
Chile	2	15	46	0	0	4	16	61	15	159
Colombia	5	15	7	0	1	1	7	42	2	80
Costa Rica	0	0	3	0	1	1	2	24	2	33
Cuba	0	0	44	0	1	2	11	43	3	104
Dominica	0	0	3	0	0	0	5	22	2	32
Dominican Republic	0	1	5	0	1	3	4	24	2	40
Ecuador	2	5	20	0	1	1	2	39	0	70
El Salvador	0	0	8	0	1	2	7	28	9	55
Grenada	0	0	1	0	0	0	1	6	1	9
Guatemala	0	0	21	0	2	5	12	50	8	98
Guyana	0	0	11	0	0	1	3	25	0	40
Haiti	0	0	9	0	0	2	3	19	3	36
Honduras	0	0	21	0	1	4	9	55	2	92
Jamaica	0	0	8	0	0	0	2	15	1	26
Mexico	2	2	36	0	2	3	11	55	1	112
Nicaragua	0	0	9	0	1	2	5	41	4	62
Panama	6	1	2	0	1	0	4	41	0	55
Paraguay	2	0	6	0	1	2	10	74	3	98
Peru	0	0	34	0	2	5	16	65	5	127
Saint Kitts and Nevis	0	0	19	0	0	0	1	9	1	30
Saint Lucia	0	0	13	0	0	0	5	14	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	40	4	67
Trinidad and Tobago	0	0	5	0	0	1	3	24	6	39
Uruguay	7	2	4	0	2	3	27	90	6	141
Venezuela (Bolivarian Republic of)	0	0	27	0	1	4	6	35	2	75

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	3	13	3	82
Iraq	0	0	22	0	0	1	0	15	2	40
Jordan	0	0	23	0	0	0	0	8	2	33
Kuwait	0	0	0	0	0	0	0	2	1	3
Lebanon	0	0	1	0	0	1	0	2	1	5
Libya	0	1	10	0	0	1	0	9	2	23
Oman	0	8	11	0	0	0	0	5	0	24
Palestine	1	1	0	0	1	0	0	3	0	6
Qatar	0	3	0	0	0	0	0	5	1	9
Saudi Arabia	0	0	9	0	1	0	0	2	2	14
Sudan	5	27	17	0	2	0	1	6	1	59
Syrian Arab Republic	0	0	8	0	0	2	0	6	3	19
Yemen	1	16	16	0	1	0	2	2	1	39

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	23	1	1	0	0	0	69	112	2	208
United States of America	30	3	55	0	0	4	69	111	6	278
Guam	0	0	5	0	0	0	0	2	1	8
Northern Mariana Islands	0	0	1	0	0	0	0	11	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

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	Unknown	
Australia	58	9	7	0	0	1	98	141	16	330
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	2	5	6	3	33
Niue	0	0	2	0	0	0	0	0	0	2
Palau	0	0	0	0	0	1	1	10	0	12
Samoa	0	0	3	0	0	0	3	19	0	25
Solomon Islands	0	0	8	0	0	0	6	21	1	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