

Domestic Animal Diversity Information System (DAD-IS)

User manual



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DAD-IS USER MANUAL

I. INTRODUCTION

1.1 What is DAD-IS?

The Domestic Animal Diversity Information System (DAD-IS) is the global clearing-house mechanism for animal genetic resources for food and agriculture (AnGR) that was developed and is maintained by the Food and Agriculture Organization of the United Nations (FAO). The 4th and most recent version of DAD-IS was launched in November 2017.

DAD-IS is a dynamic communication and information tool that aims to assist decision makers, researchers, educators and trainers to analyze trends and take informed decisions in relation to the management of animal genetic resources.

More specifically, DAD-IS provides users with:

- searchable databases on the diversity and risk status of livestock breeds at national, regional and global levels.
- tools to monitor indicators 2.5.1 and 2.5.2 of the Sustainable Development Goals (SDGs) and measure progress towards SDG target 2.5.
- news on developments related to animal genetic resources.
- publications, including guidelines and development tools.
- photographs of livestock breeds and links to other livestock diversity related online resources.
- contact details of National Coordinators for the management of animal genetic resources.

To support DAD-IS, FAO established The Domestic Animal Diversity Network (DAD-Net) in 2005. DAD-Net is an e-mail-based network that provides an informal forum for the discussion of issues relevant to the management of animal genetic resources.

1.2 Why this manual?

This manual provides an overview of what DAD-IS has to offer and provides step-by-step guidance on how to use the system's manifold tools.

The manual is intended for three groups of users: National Coordinators for the Management of Animal Genetic Resources (National Coordinators); researchers, educators and trainers; and general users.

II. WHAT ARE THE BENEFITS OF USING DAD-IS?

2.1 General benefits of using DAD-IS

- Learn about the world's livestock breeds.
- DAD-IS provides its users the opportunity to access information from over 180 countries on more than 15 000 national breed populations, representing more than 8 800 breeds and about 40 avian and mammalian livestock species. Information is stored on a wide range of breed characteristics and performance, and on population size, structure and trends. Photographs of breeds are also provided.
- DAD-IS contains regional and national portals, such as the European Farm Animal Biodiversity Information System (EFABIS), that also provides interesting tools.
- Share and exchange up-to-date information on AnGR

DAD-IS is a global clearing-house mechanism that allows countries to share and exchange livestock breed related information, including photographs. Users wishing to share such information on DAD-IS can do so through their country's National Coordinator, who is responsible for validating and inserting the AnGR data into the system.

2.2 Benefits for National Coordinators

In most countries, governments have nominated National Coordinators to coordinate activities concerning the management of animal genetic resources. These activities include the development, implementation and monitoring of national strategies and action plans for AnGR; cooperation with global and regional AnGR networks; and the collection, validation and sharing of AnGR data. The National Coordinator is responsible for entering and updating the data in DAD-IS.

DAD-IS provides several features that can assist them in this work:

• Management of national animal genetic resources information

DAD-IS provides National Coordinators a secure means to enter, update and access country-level breed data in a structured format, and with this, to monitor national breed populations and make informed decisions on the management of animal genetic resources. The data contained in DAD-IS facilitate the development of national AnGR strategies and action plans and enable countries to comply with international reporting obligations under, *inter alia*, FAO's Commission on Genetic Resources for Food and Agriculture, the Convention on Biological Diversity and the 2030 Agenda for Sustainable Development.

- Make national AnGR information available to users throughout the world National Coordinators can share and exchange livestock breed related information, including photographs, via DAD-IS. The information they make available is easily accessible to anyone interested.
- Strengthen AnGR monitoring at national, regional and global levels DAD-IS is a global information system that treats countries as the smallest unit and supports aggregation at regional and worldwide levels. By ensuring that their country's data in DAD-IS is as complete as possible and is kept up to date, National Coordinators ensure the effective operation of the AnGR monitoring systems at national, regional and global levels.
- 2.3 Benefits for researchers, educators and trainers
- Access and use of information on the world's livestock breeds DAD-IS contains a broad range of data that can easily be exported as CSV files¹ for further analyses and teaching purposes.
- Consult AnGR guidelines for research/training purposes
 DAD-IS offers a broad range of guidelines providing a wealth of information and tools in support of sustainable AnGR management, including guidelines providing advice on the development of conservation programmes and guidelines to facilitate sustainable value chain development.

¹ CSV, which stands for "comma-separated values", is a simple file format used to store tabular data, such as a spreadsheet or database. CSV formatted files can be imported to and exported from programs that store data in tables, such as Microsoft Fycel

III. HOW TO USE DAD-IS

3.1 Accessing DAD-IS

- DAD-IS can be found at: http://www.fao.org/dad-is/en.
- Note that there may be slight differences in the appearance of the DAD-IS Web site depending on the browser you use. Modern browsers such as Google Chrome, Mozilla Firefox, Opera and Microsoft Edge render the DAD-IS website well, whilst Internet Explorer does not.

3.2 Using searchable databases and extracting data from DAD-IS

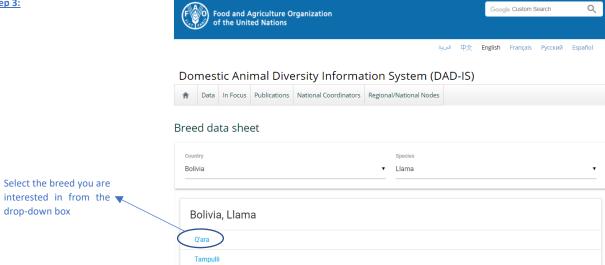
DAD-IS contains a broad range of tools allowing its users to search, extract and analyze data on the diversity of livestock breeds on national, regional and global levels. These tools are available under the website's 'Data' tab at: http://www.fao.org/dad-is/data/en/.



Are you looking for detailed information on livestock species and breeds in a specific country?

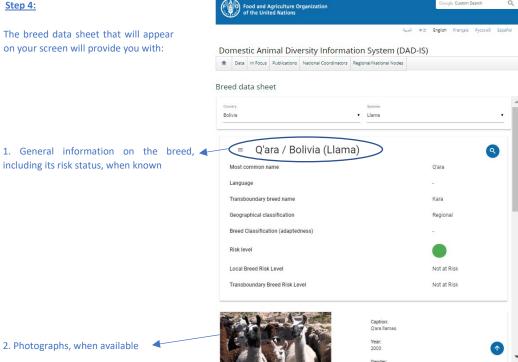


Step 3:



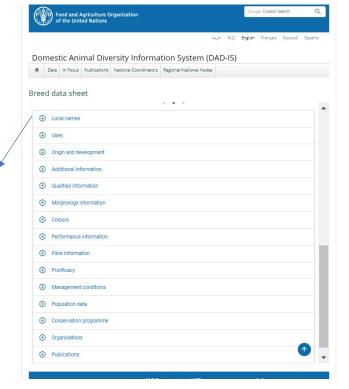
Step 4:

The breed data sheet that will appear on your screen will provide you with:

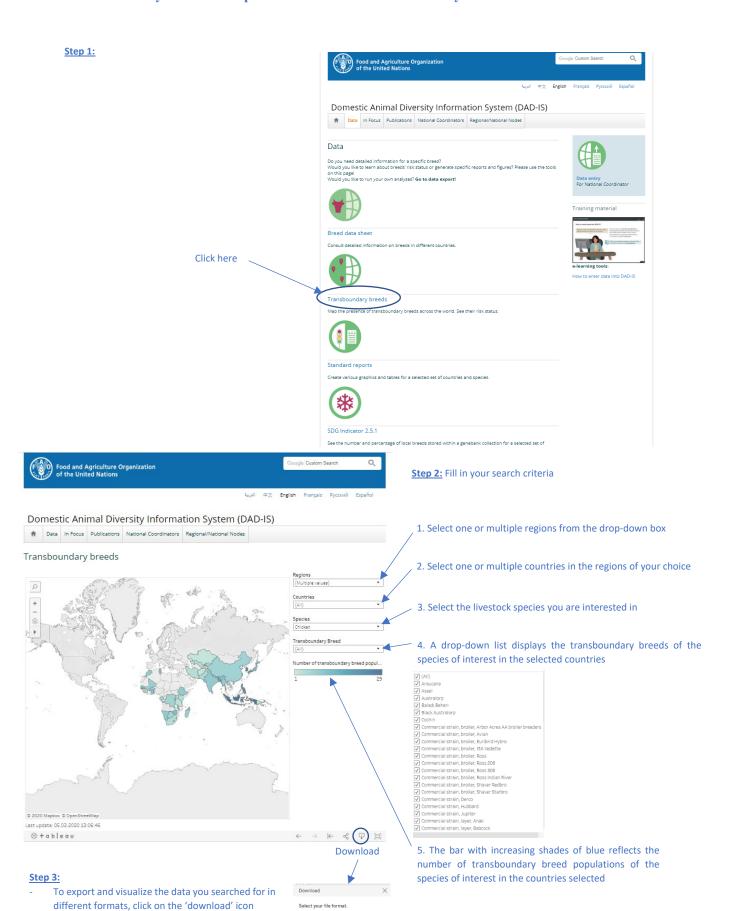


3. Detailed information on the breed can be found using the drop-down list.

This includes information on the breed's phenotypic characteristics and performance traits; population size, structure and trends; and management.



Would you like to map the occurrence of transboundary breeds across the world?



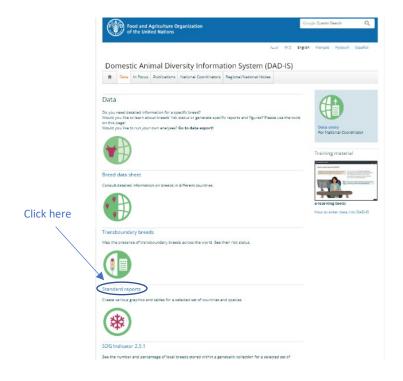
Get the App

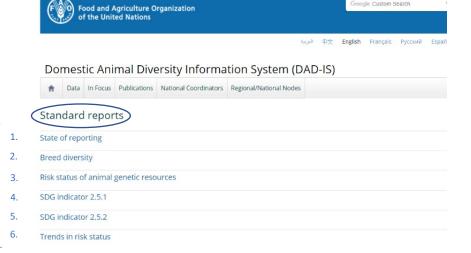
Tableau Workbook* can be used to visualize data in the form of interactive graphs, maps and tables

* Specific instructions on how to use Tableau can be found on page 21 of this manual in the section 'Using Tableau public software for data visualization'.

Would you like to create various graphics and tables for a selected set of countries and species?

Step 1: On the 'Data' landing page, click on 'Standard reports'





<u>Step 2:</u> In the 'standard reports' drop-down list select the type of data you would like to extract and visualize

Option 1: State of Reporting

Find, extract and visualize data on the proportion of up to date breed population across the globe

<u>Step 1:</u> Move your mouse cursor over the map to visualize the proportion of up to date breed population by country

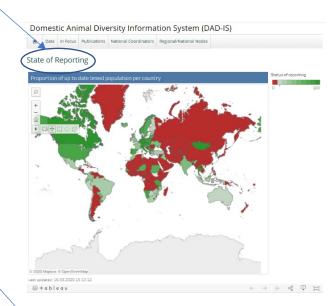
<u>Step 2:</u> For more advanced options, place your cursor anywhere on the map to access the map's view toolbar. The toolbar proposes several ways to locate information:

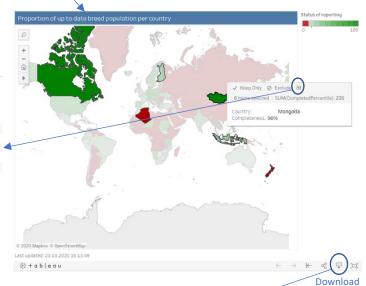
This search button allows the user to type in a name of a city/country/region. The map will automatically re-centre on that area.

Zooming:

- + The map zooms in when double-clicked
 - To zoom-out, press 'shift + double-click'
- This icon allows you to zoom in on a target area
- Reset the map to its default view
 - Use this icon to single-out a country (or several countries using the 'Ctrl' key) and visualize data in tabular form







 $\underline{\text{Step 3:}}$ To export and visualize the data you searched for in different formats, click on the 'download' icon

View Data

	rows as a text file						
Show all	columns		Full Data				
Countries	COUNTRIES (Foglio1+)	COUNTRIES(group)	Completed	CompletedPercentile	Noinfo	Notcompleted	
Algeria	Algeria	Algeria	0	0,0000	21	19	
Indonesia	Indonesia	Indonesia	51	22,6667	91	83	
Mongolia	Mongolia	Mongolia	59	98,3333	0	1	
Finland	Finland	Finland	13	16,0494	10	58	
Canada	Canada	Canada	218	99,0909	2	0	
New Zealand	New Zealand	New Zealand	0	0.0000	20	16	

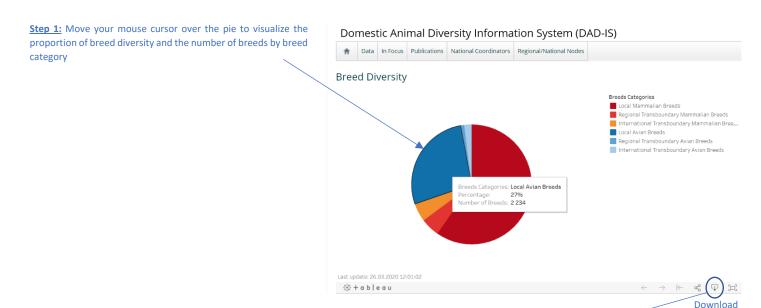
These data can be downloaded in Excel format for ease of analysis

Example of interactive map created with Tableau software



Option 2: Breed diversity

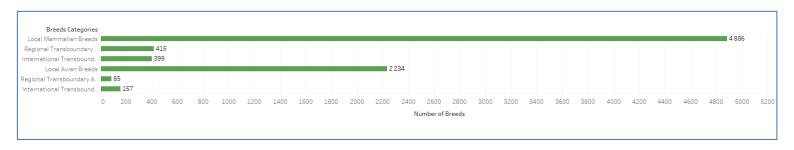
Find information on the number of breeds by breed category



<u>Step 2:</u> To export and visualize the data you searched for in different formats, click on the 'download' icon

Examples of interactive graphs created with Tableau software

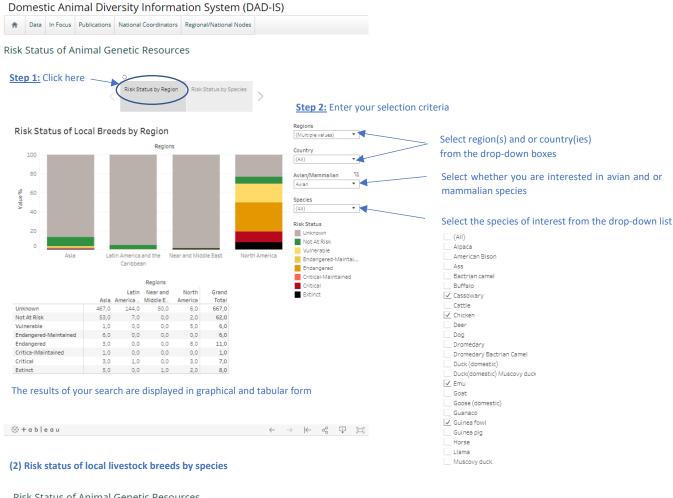




Option 3: Risk status of animal genetic resources

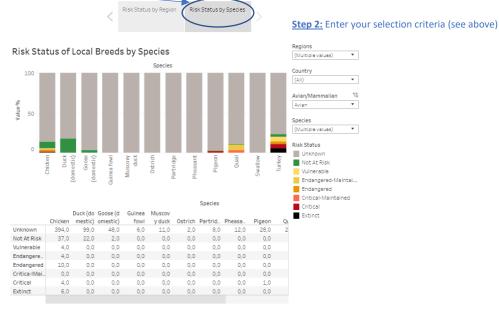
Find out the risk status of local and transboundary livestock breeds by region (1) or species (2)

(1) Risk status of local livestock breeds by region



Risk Status of Animal Genetic Resources

Step 1: Click here

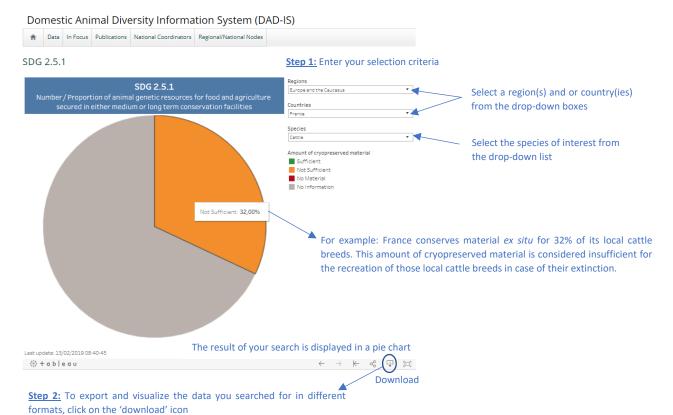


The results of your search are displayed in graphical and tabular form

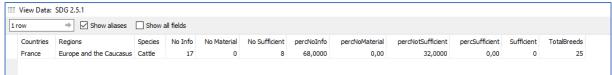


Option 4: SDG Indicator 2.5.1

See the number and percentage of local breeds stored within a genebank collection for a selected set of countries and species



Example of table created in Tableau Workbook

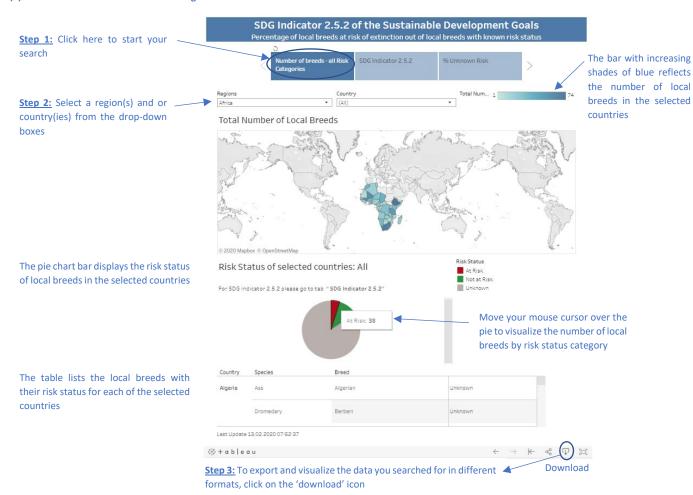


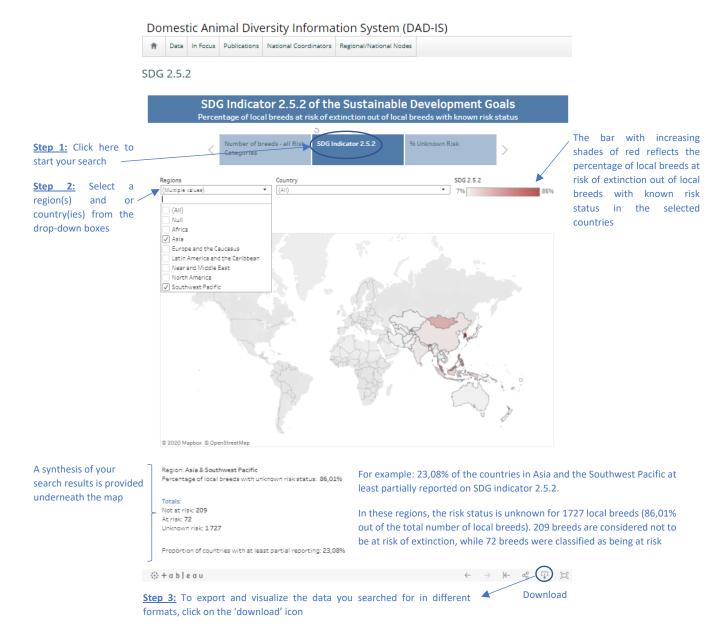
<u>Interpretation table:</u> France conserves material *ex situ* for 8 (32%) of its total of 25 local cattle breeds. The amount of this material is considered insufficient for the recreation of the country's local cattle breeds in case of their extinction.

Option 5: SDG Indicator 2.5.2

See the proportion of local breeds, classified as being at risk, not-at risk or of unknown level of risk of extinction for a selected set of species and countries

(1) Number of local breeds – all Risk Categories



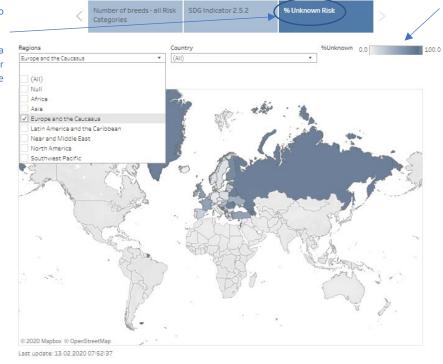


(3) % Unknown Risk

SDG Indicator 2.5.2 of the Sustainable Development Goals Percentage of local breeds at risk of extinction out of local breeds with known risk status

Step 1: Click here to start your search

Step 2: Select a region(s) and or country(ies) from the drop-down boxes



The bar with increasing shades of grey reflects the percentage of local breeds with unknown risk status in the selected countries



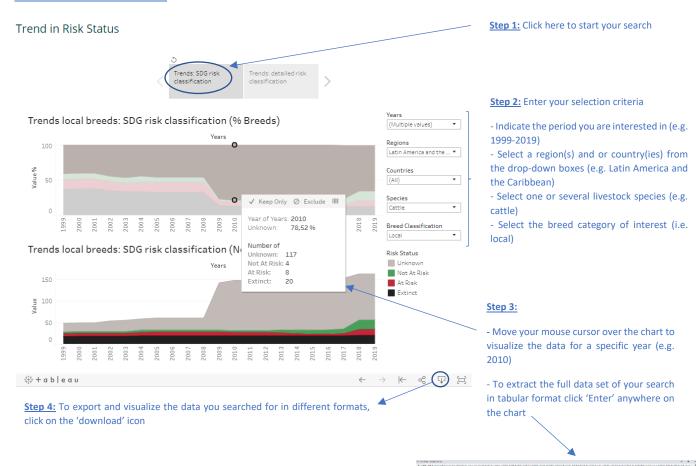
click on the 'download' icon

Option 6: Trends in risk status

Find out the trends in risk status of local and transboundary livestock breeds across the globe

1) Trends in risk status of local and transboundary breeds following the SDG risk classification (i.e. Unknown, Not At Risk, At Risk and Extinct) expressed in in percentage and number of breeds

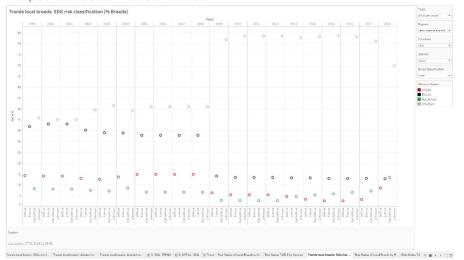
Trends in risk status of local breeds

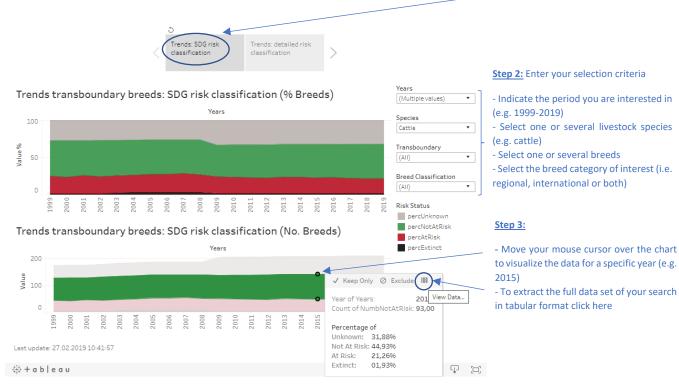


description or our

and design the same last his

Example of chart created in Tableau Workbook

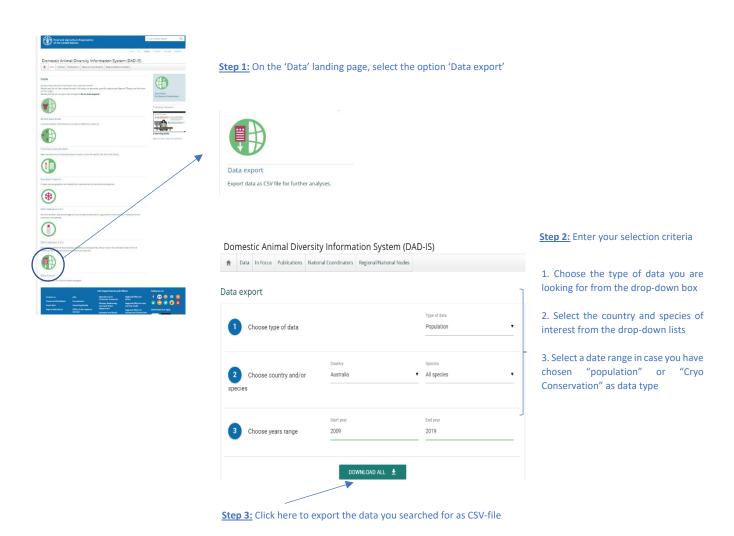




2) Trends in risk status of local and transboundary breeds following the detailed risk classification expressed in percentage and number of breeds

The screenshots explaining how to locate information on the risk status of local and transboundary breeds following the SDG risk classification can also be used for the tool that was developed to identify the trends in risk status following the detailed risk classification

Would you like to export data as CSV files* for further analyses?



| Report | Digest | Part | Par

^{*} A CSV file is a comma-separated values file, which allows data to be saved in a tabular format. CSV files can be used with spreadsheet programs, such as Microsoft Excel.

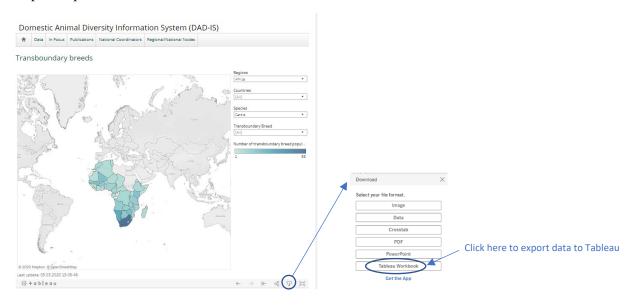
Using Tableau public software for data visualization

Data from DAD-IS can also be analyzed and displayed in different formats (interactive maps, various graphics and tables) using Tableau public software.

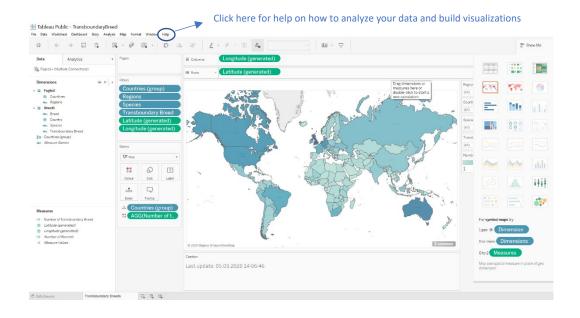
<u>Step 1:</u> Download Tableau public software free of charge on the landing pages of the 'Transboundary breeds' and 'Standard reports' data tools.



Step 2: Export the data of interest to Tableau



Step 3: Tableau offers a multitude of options to analyze and display the selected data



3.3 Using other features of DAD-IS

3.3.1 In Focus

The most recent events of relevance to the development of DAD-IS are listed under the 'In Focus' tab at: http://www.fao.org/dad-is/infocus/en/.

3.3.2 Publications

Publications on livestock diversity, including guidelines on the different management aspects of animal genetic resources, are provided under the 'Publications' tab at: http://www.fao.org/dad-is/publications/en/.

3.3.3 National Coordinators

A list of the Regional and National Coordinators for the Management of Animal Genetic Resources and their contact information, is provided under the 'National Coordinators' tab at: http://www.fao.org/dad-is/national-coordinators/en/.

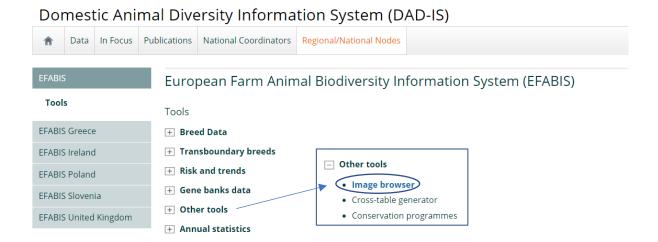
3.3.4 Regional/National Portals

DAD-IS includes virtual regional -EFABIS (The European Farm Animal Biodiversity Information System)- and several national portals.

Links to these portals are available at: http://www.fao.org/dad-is/regional-national-nodes/en/.

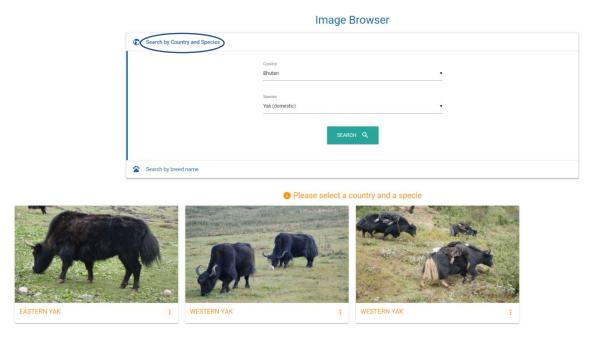
The EFABIS portal offers a range of additional tools to find and extract data relevant to the diversity and risk status of livestock breeds. These tools are listed under the 'EFABIS' tab.

Other tools provided by EFABIS include the Image browser. This tool allows its users to find images of specific livestock breeds across the globe.

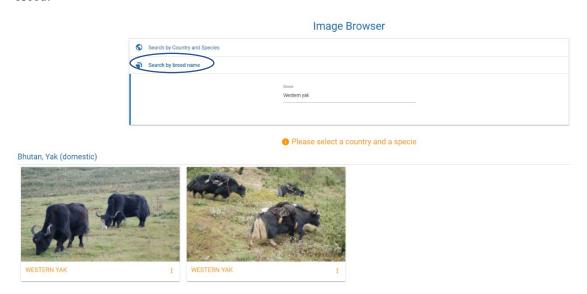


The Image browser provides two options to search for breed images:

Option 1: The user selects a certain livestock species in a specific country. The tool provides images of the different livestock breeds belonging to the species selected.



Option 2: The user enters a specific breed name. The tool provides images of the selected livestock breed.

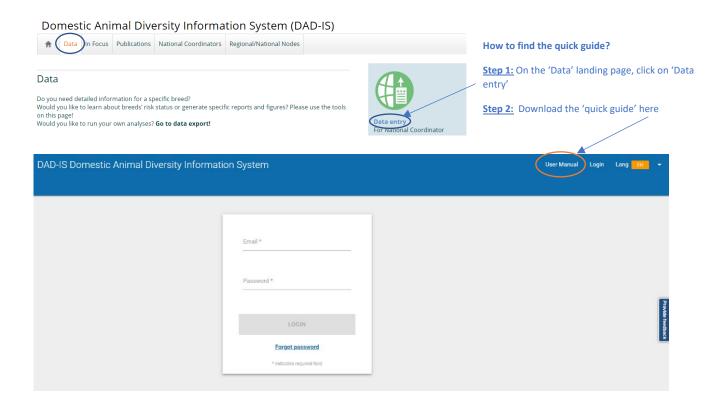


3.4 Specific information for National Coordinators on how to enter data into DAD-IS

National Coordinators are responsible for the collection and validation of information related to livestock breeds in their country, and for entering this data into DAD-IS on a regular basis.

To assist National Coordinators with the data entry process, DAD-IS provides a data entry user manual and a brief e-learning course. This guidance material can be found under the website's 'Data' tab.

3.4.1 Data entry quick guide for National Coordinators



3.4.2 E-learning course

