



The Platform for Africa Dairy Genetics Gain (ADGG)

A guide on use of the ADGG Data Platform 2020

The Platform for African Dairy Genetic Gain (ADGG) is an International Livestock Research Institute (ILRI)-led investment by the Bill & Melinda Gates Foundation (BMGF) that has developed and is currently pilot-testing a multi-country genetic gains platform that uses on-farm performance information and basic genomic data to identify and promote wide use of appropriate superior purebred and cross-bred bulls for artificial insemination (AI) delivery and planned natural mating for smallholder farmers in Africa.

The ADGG project team at ILRI, with contributions from partners has developed a new agile and scalable web-based data platform to collate and store data obtained from different types of farmers (smallholder, medium scale and large scale), initially in Eastern African (<https://www.adgg.ilri.org/uat/auth/auth/login>).

This manual provides guidelines on using the data platform.

Authors:

D. Mogaka¹, J.M.K. Ojango¹, S. Maina³, D. Obonyo³ R. Mrode^{1,2} and O. Mwai¹.

¹*International Livestock Research Institute (ILRI), PO Box 30709, Nairobi, Kenya*

²*Scotland's Rural College, Easter Bush, Midlothian EH25 9RG, Scotland, UK*

³*Competa Millman, Box 333-00502, Nairobi, Kenya*

1. Introduction

The African Dairy Genetic Gain (ADGG) is developing and testing a multi-country genetic gains platform that uses on-farm performance information and basic genomic data to identify and provide superior crossbred bulls for artificial insemination (AI) delivery and planned natural mating to smallholder farmers in Africa. ADGG is supporting the development and upscaling of digital information and communication technology (ICT) platforms through a farmer-focused public-private partnership for on-farm data recording and timely, actionable cow and herd management feedback to farmers initially in Eastern Africa, with options for expansion to other regions of the continent. Additional information on ADGG is available at <https://africadgg.wordpress.com/>.

ADGG has developed a new agile and scalable web-based data platform to collate and store data obtained from different types of farmers (smallholder, medium scale and large scale), initially in Eastern African (<https://www.adgg.ilri.org/uat/auth/auth/login>). The ADGG data platform web application is driven by a MySQL database hosted under Amazon cloud (Amazon Web Services - AWS). The system has a RESTFull Application Programming Interface (API) to safely expose data collected from national databases into a single access point to authenticate and allow access from a central place. Authorized users are provided with a unique key to access the API and its resources. The API allows updates of data from authorized partners and third party applications.

This document provides a general guide for users of the ADGG data platform.

What is the ADGG Data platform?

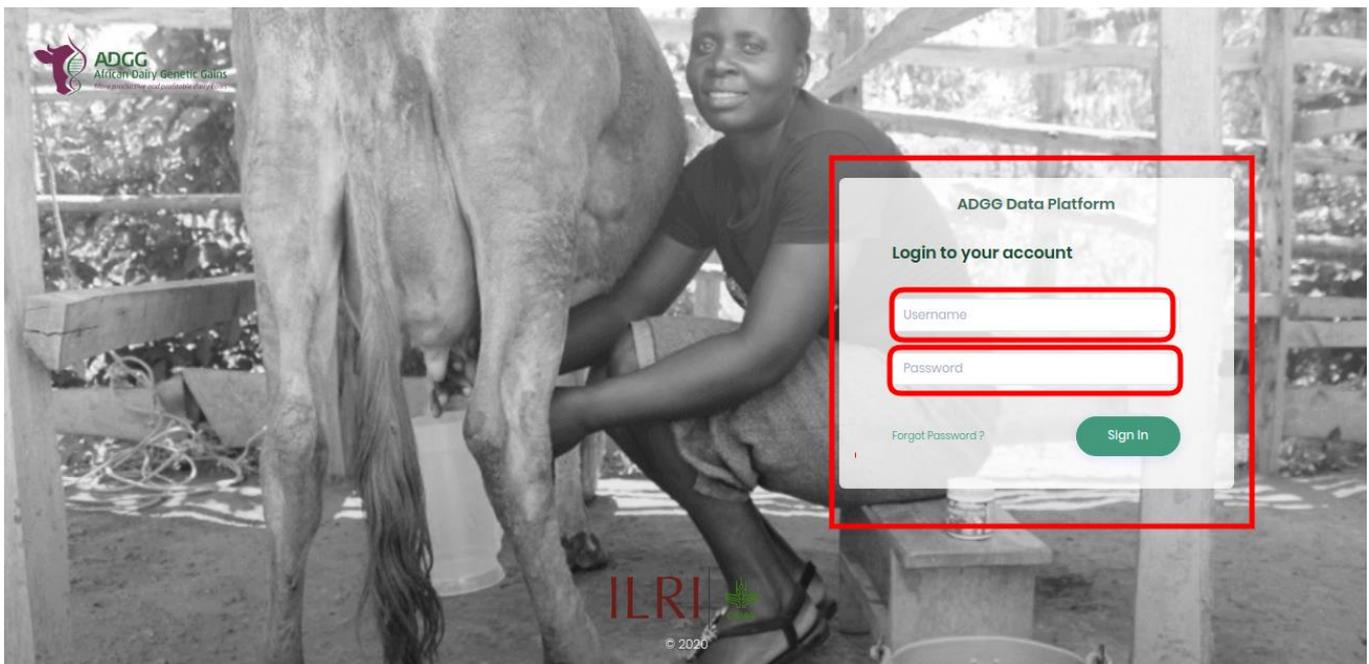
ADGG data platform contains data on farms and dairy animal reared in specified countries of Eastern Africa. The database has access control logic features for different users based on their role and permissions.

The data is owned by the respective country and can be used by the registered farmers either directly or through service providers to manage their herds, leading to sustained animal and herd productivity gains.

2. Access to ADGG Platform

To access the platform the following url is used: <https://portal.adgg.ilri.org/>

When you click the sign in button, you will open the login page as shown below where the user will then login using their username and password. In case of a forgotten password the user can click the **forgot password** link on the login page for a reset.

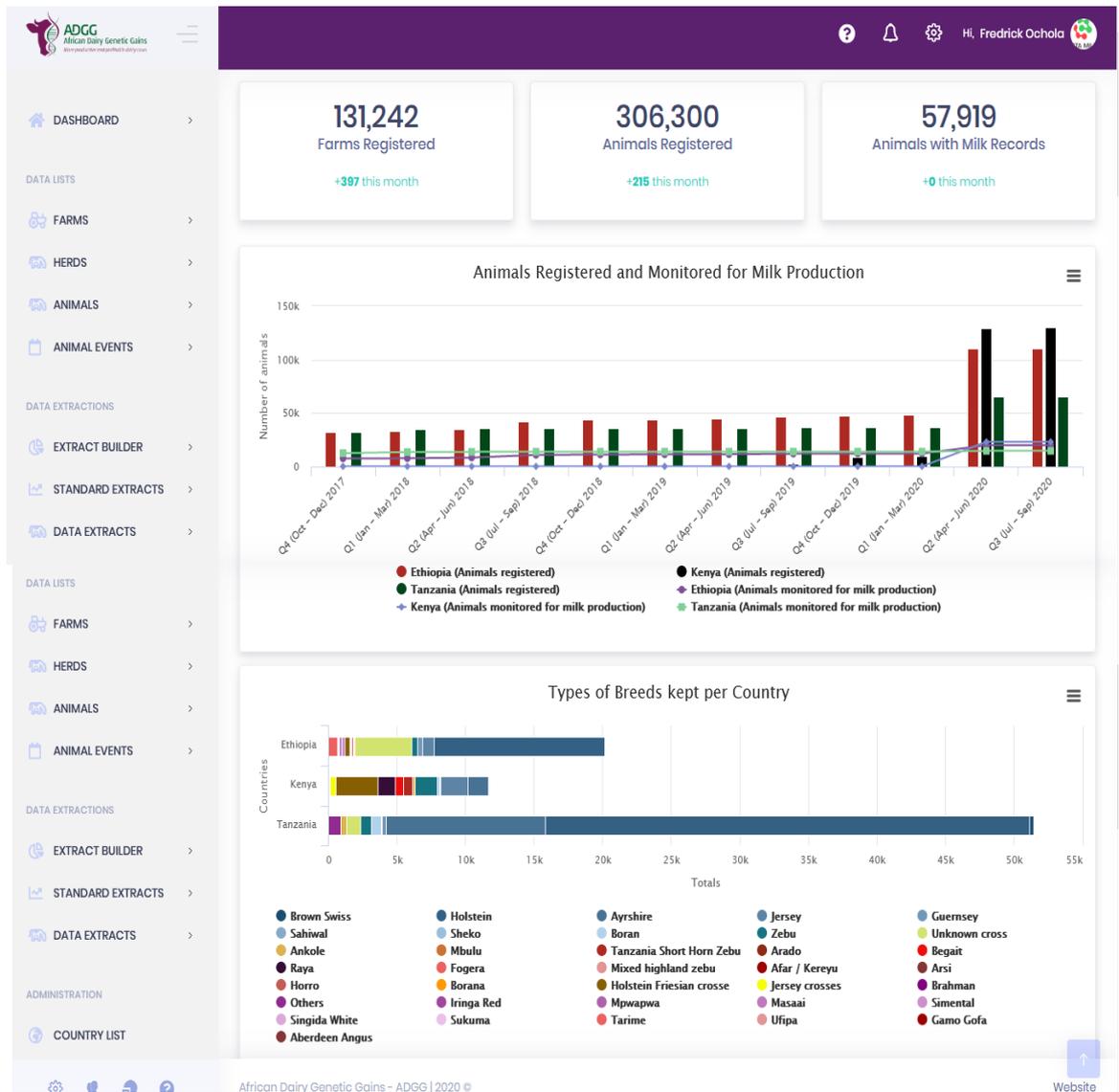


There are several user levels on the system that determine what the user can view. Since the system is multinational the levels help to restrict data access to unauthorized users. Some levels include **system administrator** who can access all areas of the system, **country user** who can access data regarding their base country only such as AI-Technicians, **organization user** who can access data belonging to an organization in a country.

3. Access to Dashboards

3.1 Main Dashboard

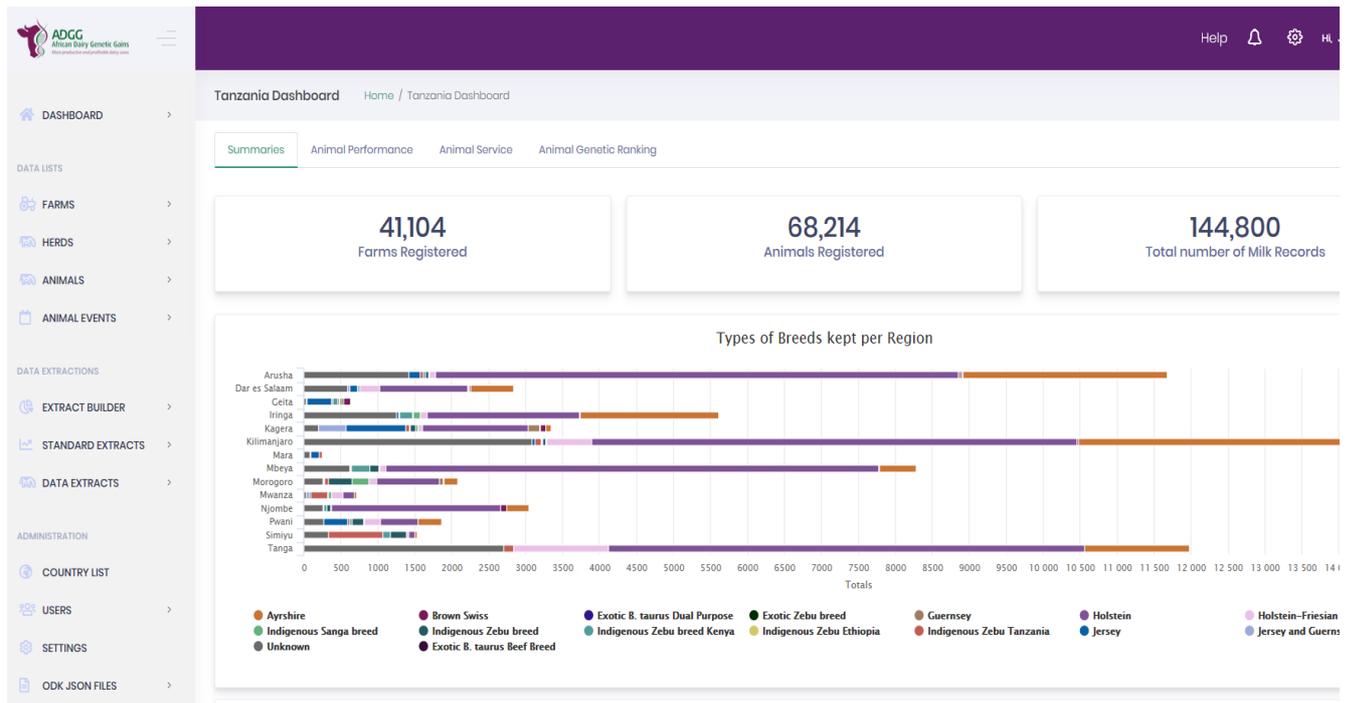
If logged in as a global user such as system administrator the landing page is the main dashboard which should appear as shown below.



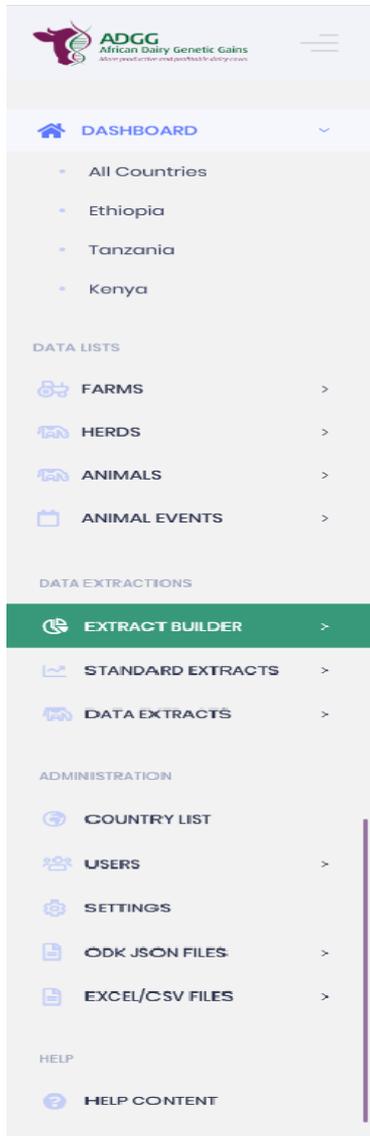
The main dashboard contains graphical presentations of summaries of animals registered, farms and milk records. It also contains all registered country summaries of farms, cattle, types of breeds kept per country and categories of animals kept on yearly statistics.

3.2 Country Dashboards

If logged in as a country user the landing page displayed is the country dashboard for which the user is based in. It contains data summaries of the country in statistics on given periods of time. Some summaries include performance in terms of fertility and milk yield. The dashboard also has insemination summaries that give statistics on average insemination on given time periods.



4. Main Menu Usage



The main menu is located on the left side of the dashboard and contains links to the logged in user's role's authorised functionalities in the system.

The following is a list of main menu items under different sections:

Dashboards - This section has the main dashboard as well as links to each country dashboards on drop down

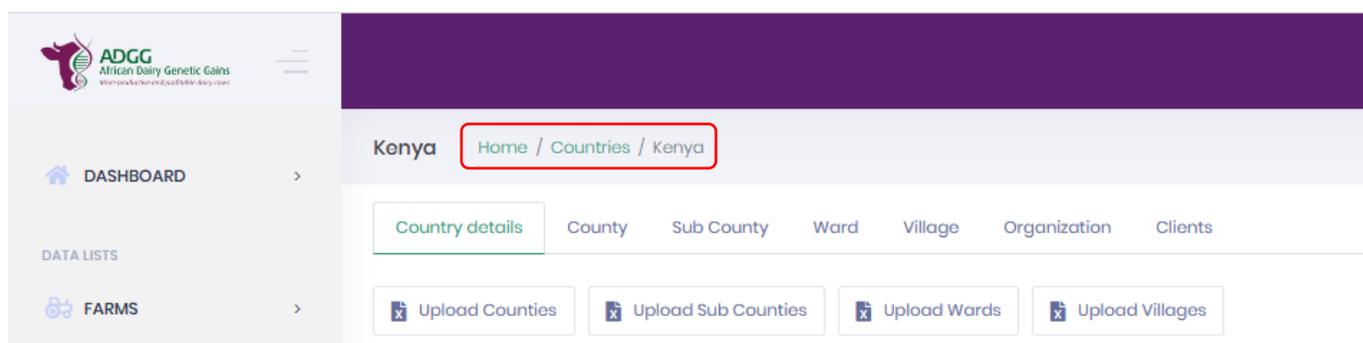
Data lists - This section contains lists of data on entities such as farms, herds, animals and animal events. The data displayed depends on the user levels.

Data Extraction - This section contains the *extract builder* that is used to query the database for the custom datasets by the user and the results are found under *data extracts*. It also has *standard extracts* which is based on preset parameters to query the database as well.

Administration - This section contains the system settings, key-value pair mappings for all farm data variables, user roles management and list of countries registered into the system

Help – This section contains the system help module with links to the web interface user manual, mobile app user manual, API documentation and Database documentation. for reference by authorised users only.

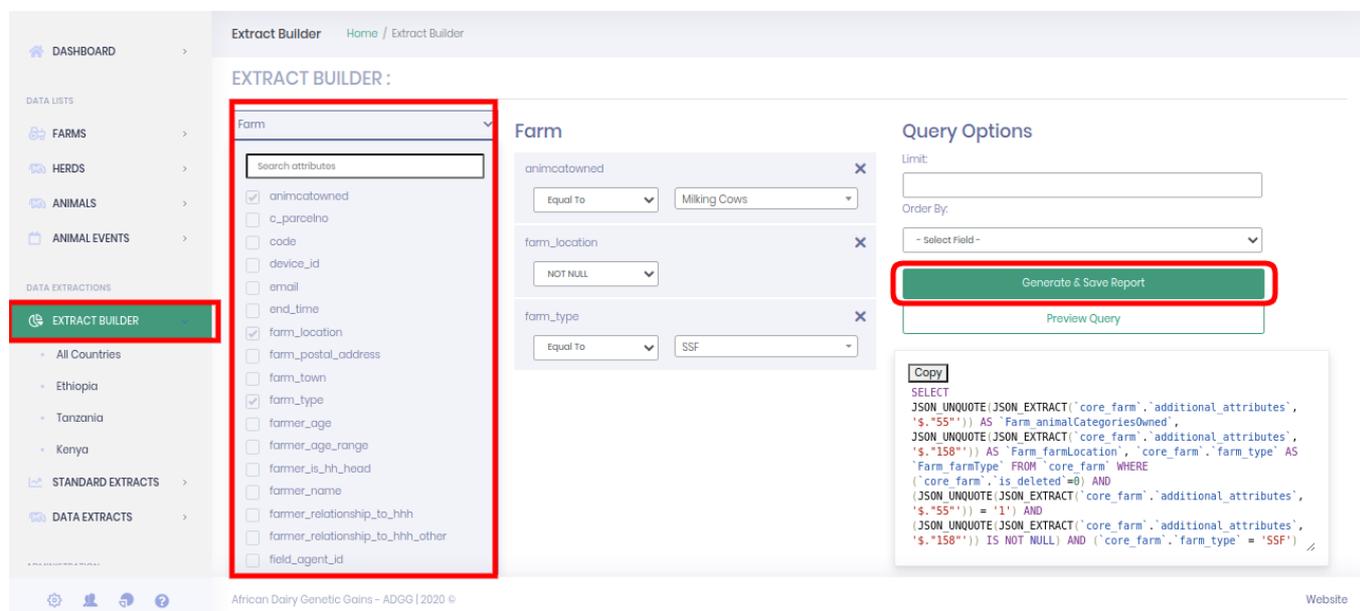
At the top of each page visited by the user, there is a Breadcrumb menu with links to take the user back to the logically previous page they had visited to help with navigation within the module the user is using as shown below:



5. General Overview Of Data Extraction

There are two methods: Extract Builder and Standard Extracts.

5.1 Extract Builder



This is an ad-hoc report builder where the user can generate their desired reports on demand based on the data on the database. It contains groups of data items in the database that can be selected while on the system. The user then selects the operator signs to be used to query the database and adds their desired values where necessary then generates the report by clicking the *generate and save report* button. The report is then generated and saved under **Data Extracts** which are organized by country where they can be downloaded in the **csv** format.

5.2 Standard Extracts

The screenshot shows the 'Pedigree File' interface. At the top, there are filters for Country, Region, District, Ward, Village, and From. A 'Go' button is highlighted with a red box. Below the filters is a table titled 'Pedigree File' with columns: NAME, REPORT FILE, STATUS, STATUS REMARKS, ERRORS, EXTRACTED BY, DATE, REBUILD, and ACTIONS. The table contains several rows of data, including entries for Ethiopia and Tanzania. The table is also highlighted with a red box.

NAME	REPORT FILE	STATUS	STATUS REMARKS	ERRORS	EXTRACTED BY	DATE	REBUILD	ACTIONS
Pedigree_File_Ethiopia	Pedigree_File_Ethiopia_11-Sep-2020 2:51 pm_1599825119.csv	Completed			Fredrick Ochola	11-Sep-2020 2:51 pm	Rebuild Report	👁️ 🔄 🗑️
Pedigree_File_Ethiopia	Pedigree_File_Ethiopia_19-Aug-2020 3:23 pm_1597839806.csv	Completed			Fredrick Ochola	19-Aug-2020 3:23 pm	Rebuild Report	👁️ 🔄 🗑️
Pedigree_File_Ethiopia	Pedigree_File_Ethiopia_13-Aug-2020 11:43 am_1597308242.csv	Completed			Miriri Mogaka	13-Aug-2020 11:43 am	Rebuild Report	👁️ 🔄 🗑️
Pedigree_File_Ethiopia	Pedigree_File_Ethiopia_12-Aug-2020 8:01 pm_1597251678.csv	Completed			Abu Hassen	12-Aug-2020 8:01 pm	Rebuild Report	👁️ 🔄 🗑️
Pedigree_File_Ethiopia	Pedigree_File_Ethiopia_20-Jul-2020 8:54 am_1595224440.csv	Completed			Julie Ojango	20-Jul-2020 8:54 am	Rebuild Report	👁️ 🔄 🗑️
Pedigree_File_Tanzania	Pedigree_File_Tanzania_20-Jul-2020 8:26 am_1595222780.csv	Completed			Julie Ojango	20-Jul-2020 8:26 am	Rebuild Report	👁️ 🔄 🗑️
Pedigree_File_Ethiopia	Pedigree_File_Ethiopia_15-Jul-2020 10:02 am_1594796523.csv	Completed			Miriri Mogaka	15-Jul-2020 10:02 am	Rebuild Report	👁️ 🔄 🗑️
Pedigree_File_Ethiopia	Pedigree_File_Ethiopia_14-Jul-2020 10:8 pm_1594721329.csv	Completed			Julie Ojango	14-Jul-2020 10:8 pm	Rebuild Report	👁️ 🔄 🗑️

These are predefined data extracts unlike the extract builder where the user builds their own reports. The user filters the standard extracts they require then clicks the *Go button* once and the extract is generated and saved in the csv format. These extracts can be viewed on the grid on the same page and can be downloaded for further analysis.

6. Access to Help Content

The main system help content is located at the bottom of the main menu under the **Help** main menu section as shown below. It can also be accessed from anywhere on the system by clicking the *question icon* at the top menu as shown below. This opens the help content concerning your current location on

The screenshot shows two parts of the system. On the left, a green button labeled 'HELP CONTENT' with a question mark icon is highlighted with a red box. On the right, a dark purple navigation bar at the top of the page features a question mark icon, a bell icon, a gear icon, and the text 'Hi, Ethiopia User Test' next to a user profile icon. The question mark icon is also highlighted with a red box.

the system.

This contains the web platform user manual, the android app manual, API documentation and database documentation. The documentation can also be downloaded for offline use by **pdf** or **docx** formats. For ease of use, the user can search the topic they would like help with by filtering by the system modules or the name of the item.

The screenshot displays the ADGG (African Dairy Genetic Gains) web application interface. On the left is a navigation sidebar with categories: DASHBOARD, DATA LISTS, FARMs, HERDS, ANIMALS, ANIMAL EVENTS, DATA EXTRACTIONS, EXTRACT BUILDER, STANDARD EXTRACTS, DATA EXTRACTS, and ADMINISTRATION. The main content area is titled 'Help Content' and shows a breadcrumb trail: Home / Help Contents / Help Content. Below this is a 'Filters' section with a table:

Module	Name
--All Modules--	add farm

The 'add farm' cell in the table is highlighted with a red circle. To the right of the table are 'Go' and 'Reset' buttons. Further right are 'Read as PDF' and 'Read as Word' buttons. Below the filters is a section titled '1- Add Farm Data:' with the following text: 'You may add farm data in bulk by uploading an excel or csv file. After accessing farm data, click on the "UPLOAD EXCEL/CSV" button below the filters section as indicated by the red circle in the image.' Below this text is a smaller thumbnail of the application interface showing the 'Manage Farms' page with the same filter table and red circle highlighting.