Food and Agriculture Organization of the United Nations

AMIS Market Database User Consultation

2019

Office of Chief Statistician (OCS), FAO

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Key Findings

- Apart from helping to enhance transparency in global food markets, survey results suggest that large private companies and trade organizations use AMIS data and analysis to make investment and strategic decisions. Furthermore, AMIS analysis informs import/export policies of national governments, and provides researchers with a rich source of information.
- For data quality, the overall percentage of **satisfied responses was 83%; 62% of users expressed satisfaction across all 5 principles** of the Statistical Quality Assurance Framework.
- **Commercial companies** are the largest user group accounting for about **35% of users**, followed by **students/educators (22%)**, **researchers (20%),** and **public administration (9%).**
- The **geographic distribution of users is global**, with a **high concentration in Asia and Europe**, which together account for two-thirds of all users.
- Users reported that the **limited scope of AMIS** (i.e. supply and demand information on four commodities for 28 countries) **was a strength**, helping to simplify key messages and analysis for policy makers, and business leaders. However, the **most common request was to expand the product and geographic** coverage of the database, which would not be feasible within the current mandate of AMIS.
- The **Supply and Demand Overview** is the most used viewing option in the database.
- The data comparison tool is highly appreciated by users. **Prior to AMIS**, users had to **collect,** and **compile** the information themselves resulting in **higher cost**, **slower results**.
- The **data visualizations are a very popular feature with 70%** of respondents indicating they are useful and easy to understand.

Recommendations

- Address user concerns about accessibility of metadata by providing links to the notes and definitions on the landing page.
- Include more detailed explanations regarding the differences between FAO-AMIS, IGC, and USDA figures and underlying methodologies.
- Expand data visualizations to allow comparisons of multiple crops, geographic areas, etc. in the same graph.
- Promote the market database by highlighting its content in the Market Monitor and other media, such as Twitter.
- Private sector companies account for more than one-third of AMIS users, yet are not contributors in terms of data or resources. Consider reaching out to major companies and trade associations to discuss potential ways to collaborate.
- Incorporate clear terms of use in the metadata, and footer of the market database page.
- Provide the actual date of figures, rather than the date of upload.

Background Information

The Agricultural Market Information System (AMIS) was created to enhance transparency in international food markets and facilitate policy response during extreme food price volatility. The initiative was launched in 2011 by the G20 Ministers of Agriculture following two consecutive global food price hikes. It is supported by an inter-agency Secretariat – hosted by FAO – composed of ten international organizations and entities. Participating countries include G20 members and Spain plus seven additional major importing and exporting countries of agricultural commodities.

As one of its main outputs, AMIS provides a database of up-to-date market information on the production, utilization, stockholding, and trade of four main food crops that are widely traded in international markets (i.e. wheat, maize, rice and soybean). The database provides country-specific information for each of the 28 participants (with the EU representing all of its member states, including individual G20 members) which make up roughly 80-90 percent of global production of the targeted crops while the rest of the world is provided as an aggregate.

Based on these data, a monthly market bulletin (called "AMIS Market Monitor") is developed and disseminated to roughly 1,400 subscribers. The Market Monitor provides detailed analysis on the global supply and demand situation, crop conditions, policy developments, and price trends in global food markets. Google Analytics indicates that approximately 35,000 individuals access the AMIS platform each year.

In view of a recent update and revamp of the AMIS market database, and considering the importance of AMIS for global food price transparency, the Office of Chief Statistician (OCS) selected the AMIS market database for a User Consultation (UC). OCS carries out UCs for corporate databases in order to report on Objective 6 Indicator 6.2.3.b "Proportion of users who are satisfied with FAO databases", collect information on users, and compile actionable insights to improve statistical products. The general methodology for UCs is described in *Statistical Standard Series (SSS) 12: Database User Consultations.[1]*.

Methodology

The methodology followed by all UCs is compliant with SSS 12. Due to unique qualities of each database, the processes vary slightly, but the main measurement of satisfaction and user profiles are the same. For this UC, instead of having a short form and long form, a medium length survey was developed. Then, respondents which volunteered to provide additional information in the survey were invited for brief telephone interviews. However, the indicators defined in SSS 12 were computed from the survey results.

Work plan

The UC for the AMIS market database was conducted from September 2019 to January 2020. The survey was developed by the Office of Chief Statistician (OCS) in compliance with the methodology defined in SSS12 and in close collaboration with the AMIS Secretariat. The overall steps from inception to the finalization of the report is shown in the table below:

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[1]http://intranet.fao.org/fileadmin/user_upload/scp/Standards_for_quality_compliance/SSS_User_Consultation__endorsed_5_April_2019_.pdf

Table 1: Process/Steps of AMIS UC

Main Steps	2019				2020
	Sep	Oct	Nov	Dec	Jan
1. Development of Concept Note and Survey	■	■			
2. Implementation of Survey			■	■	
3. Data analysis and reporting				■	
4. Final report					■

Questionnaire

OCS led the initial drafting of the questionnaire with major inputs from the AMIS Secretariat to ensure relevance of the results. The questionnaire was divided into 4 sections (see Annex 1):

1. User information
2. Overall database usage and functionality
3. Quality of FAO-AMIS data
4. Final remarks

Section 1 collected information about users (institution, country, user group) and their use of the database, for example frequency and purpose of accessing the site. Only users who indicated that it was not the first time that they visited the database were invited to complete the remaining sections. Section 2 included questions on the overall use and functionality of the database, for example metadata, download functions, data comparability and other visualization tools. Section 3 collected information on the quality of the AMIS data based on the 5 principles of the Statistical Quality Assurance Framework (SQAF). These principles measure the Relevance, Accuracy, Timeliness, Comparability, and Accessibility of the data. Likert-scale questions were included to measure the degree of user satisfaction related to each dimension of the principle. Finally, the last section asked if the respondents would be available for additional follow-up.

The AMIS team used Survey Monkey to develop and launch the questionnaire. The questionnaire appeared as a pop-up to all users on the landing page of the market database. Furthermore, the AMIS team included a link to the questionnaire in their monthly newsletter and in the AMIS Market Monitor.

Data collection, cleaning, and sample

Data collection took place from November 12 to December 15 (Figure 1). From November 12 to 28, all users who wanted to access the market database were obliged to first complete the survey; from November 28 onwards, users were given an option to opt out of the survey and continue directly to the database.[2]

Data cleaning was performed using RStudio. The first step was to remove invalid records based on the consistency across demographic information (e.g. the institution needed to be consistent with user type; the user defined country should correspond with the country of the respondent's IP address; etc.). Then,

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[2] Providing an option to opt-out was decided by the AMIS Secretariat and not coordinated with OCS. While this reduced the sample size, a chi-square test comparing the results from Section 1 before and after the opt-out option indicated the samples were not significantly different. Accordingly, all survey results were combined and analyzed together.

some corrections were made for classifying user groups and institution names when possible. Table 2 gives the general description of the survey sample, showing the total number of respondents, and valid/invalid responses.

Table 2: Summary responses

Description	Quantity
Total responses	213
Total invalid responses	33
Total valid responses	180

One-hundred and eighty records were included in the analysis of user profiles. Among these records, 107 indicated that it was not their first time using the database, so they were prompted to the remaining sections of the questionnaire. Accordingly, results for Sections 2-4 of the survey are based on these responses.

Figure 1: Number of completed questionnaires received by date
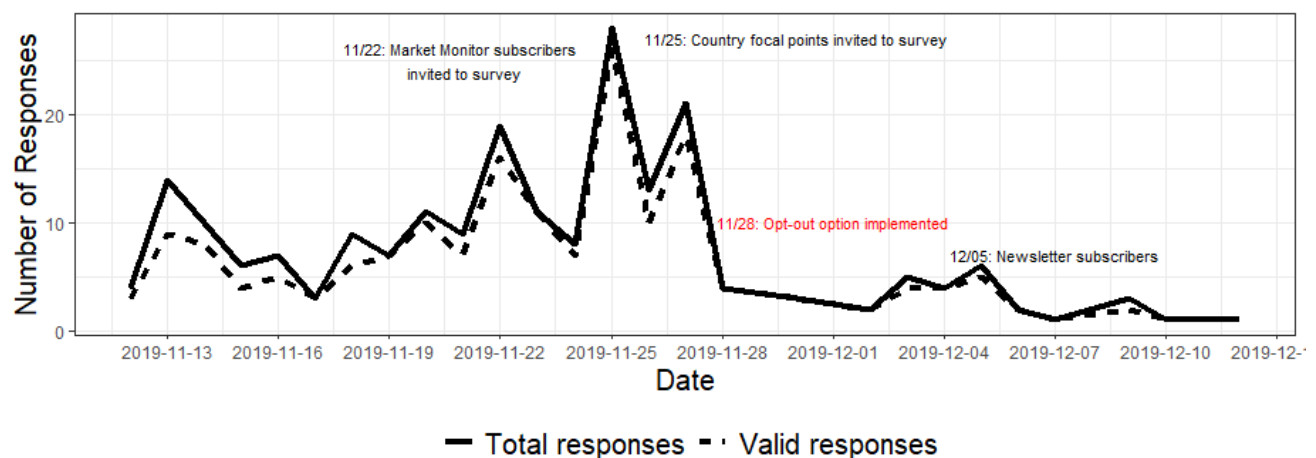
In parallel to the online survey, respondents who volunteered to provide additional feedback were invited for a short interview. Six interviews were conducted (see Table 3), which took place during December 6–19. They were semi-structured by prompting the respondents to describe how they use AMIS data, and what could be done to improve the database. Probing questions were then added spontaneously based on their replies.

Table 3: Number of interviews by user group

| User group	Number of interviews
Commercial Companies	3
Public administration	2
Researcher	1

Results

User Profiles

Survey respondents spanned 63 countries and represented every continent (Figure 2). Asia and Europe each accounted for about a third of all data users, while 23% of data users were located in the Americas. Africa accounted for 8%, and the remaining 3% of users were located in Oceania (Australia to be specific).

Users affiliated to commercial companies accounted for more than one-third of respondents, making them the largest group by far. Students/educators accounted for 22% while researchers and public administration users accounted for 20% and 9% respectively (see Figure 3).

Figure 2: Map of AMIS users by share
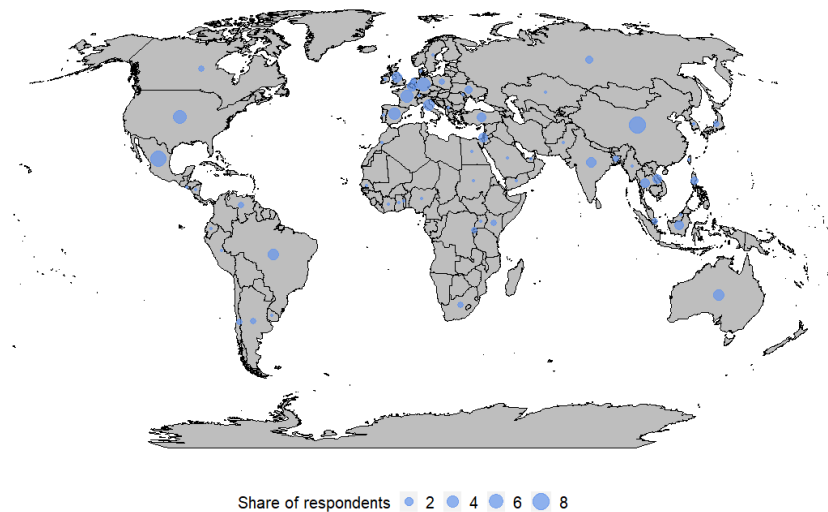
Figure 3: Users by category and region
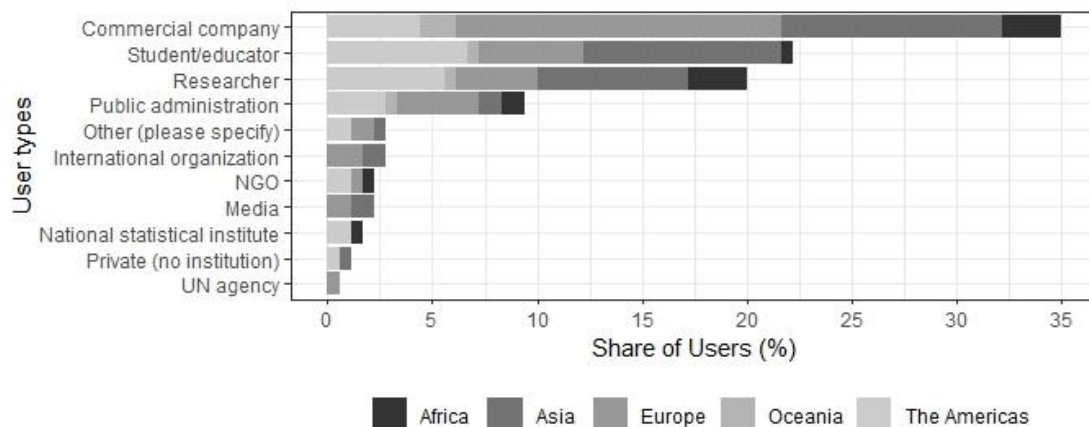
About 40% of respondents indicated that they were first-time users of the database, followed by monthly (34%), which is the most natural frequency to access the data as it coincides with the update schedule. The other categories were quarterly (9%), weekly (8%), and annually (4%).

Almost half of respondents indicated that they discovered AMIS through the FAO website. Another 26% cited that they found it through an online search, and 14% were recommended to use AMIS by colleagues, social media, or various other channels. 11% discovered the AMIS database through the newsletter (Figure 4).

Figure 4: Mode of discovery of AMIS database

Statistical Quality Assurance Results

Results of the user satisfaction assessment across the 5 SQAF principles were very positive. 83% of all responses indicated agreement, or strong agreement that the data were accessible, accurate, consistent, met their needs, and/or were timely. The percentage of "fully satisfied users", defined as the percentage of users who indicated "agree" or "strongly agree" across all 5 SQAF principles, was 62%. For comparative purposes, the percentage of fully satisfied FAOSTAT users was 61%[3].

Despite the positive results overall, some respondents indicated neutral agreement across several principles. Regarding accessibility, metadata was occasionally perceived as being difficult to find. In fact, when you land on the market database homepage, it requires navigating to "Custom Query", and creating a specific query to locate specific metadata (definitions, and notes). Also, several users suggested that the actual date of data release should be available instead of the date of upload.

Many respondents would like to see data on additional commodities and countries (while some specifically praised AMIS for its narrow and focused approach). In this regard, it is important to note that the AMIS mandate was set by the G20, which specifically requires the AMIS Secretariat to focus on just four major agricultural commodities. Country coverage is based on the relative importance of each country in international markets of the respective commodities. Accordingly, any increase in scope of commodities or countries would require a review of the AMIS mandate by the G20.

Table 4: Percentage of responses to question, "AMIS data are…"

| Response	Accessible	Accurate	Consistent	Meets Needs	Timely	Share
Strongly Agree	21%	21%	19%	18%	22%	20%
Agree	62%	62%	68%	62%	63%	64%
Neutral	18%	18%	13%	19%	14%	16%
Disagree	0%	0%	0%	1%	1%	1%
Strongly Disagree	0%	0%	0%	0%	0%	0%

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[3] See http://www.fao.org/3/ca7239en/ca7239en.pdf.

Note: Share sums to more than 100 because of rounding.

Specific feature results

Likert-style questions were also included to assess user satisfaction with specific features of the database including visualizations, metadata, data download format, usability, and the compare data function. Data visualizations and the overall usability of the database received the most positive responses with more than 70% of respondents choosing "Strongly agree" or "Agree". At the other end of the spectrum, about 25% of respondents selected "Neutral" or "Disagree" when asked whether the metadata was clear and sufficient to describe the data. However, nobody selected "Strongly Disagree".

Figure 5: Likert-response to specific database features
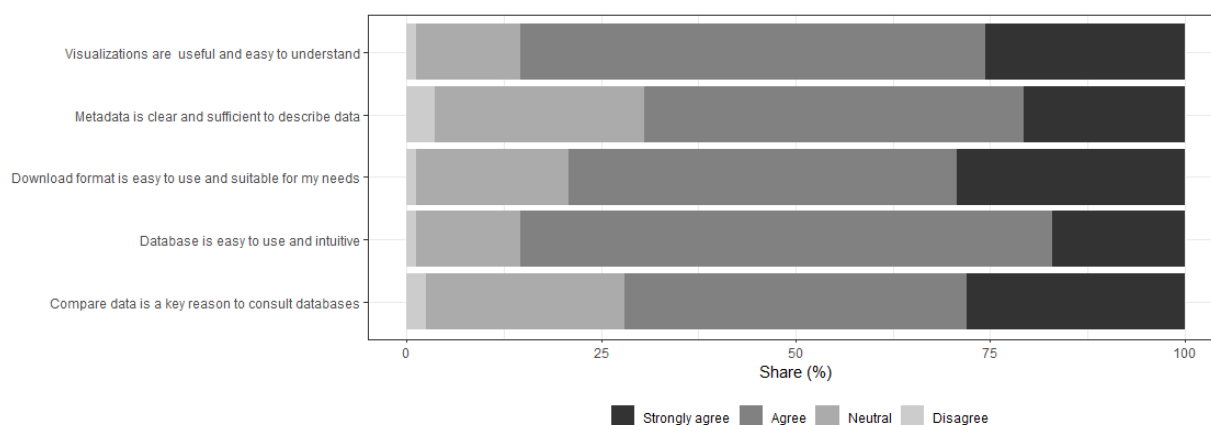
Note: "Strongly Disagree" was included in the answer options, but was not selected by any respondents.

A follow-up question was included to assess which features are most appreciated by users. Data downloads and visualizations via statistical tables are the most liked functions with 53% and 41% of users, respectively. Chart downloads were selected by 35% of users, and balance downloads by 20%.

Respondents were also asked about their preferences for displaying the data. About half of the users found the supply and demand overview option to be the most useful, followed by comparing data from different sources (21% of the users). The custom query option was found to be useful by about 15% of the users; while 12% of the users were undecided on which viewing options are most useful for their needs (Table 5).

Table 5: Percentage share of responses to most useful options in database

Viewing Options	Share
Supply and Demand Overview	52%
Compare Sources	21%
Custom Query	15%
Undecided	12%

User Stories

In order to obtain qualitative feedback on the use of the data and to complement survey results, respondents who indicated their availability to provide additional information were invited to short

(usually 15-20 minute) telephone interviews. Three respondents from the private sector, 2 from public administration, and 1 from research accepted the invitations. The results are summarized below.

Private Sector

A distribution manager of a prominent Australian fertilizer company reported using AMIS information for business and investment decisions. He told us how his company recently used AMIS data to identify an upcoming economic opportunity in another country, which led his company to anticipate a large purchase of inputs. He added that without AMIS, his company would have to hire staff to compile these data which would result in a significant cost.

A trade-marketing representative of an Australian grain company also highlighted how she uses AMIS data on wheat to understand global markets. More specifically, she noted that AMIS was the only source where she could find reliable information on wheat import/exports for neighbouring countries where her company conducts business. She noted that the option to compare FAO/AMIS estimates with other sources (i.e. IGC and USDA) resulted in higher credibility of the data, and more transparency overall. She also reported to having recommended AMIS to clients. In terms of improvements, she suggested that metadata be easier to find and more complete, for example by providing the definition of specific elements directly in the balances.

AMIS data are also used by trade organizations. A representative from the International Fertilizer Association (IFA) noted that AMIS data are one of the important inputs into their fertilizer demand outlook publications. IFA disseminates these reports to advise their members consisting of fertilizer producers and traders (currently 476 according to the IFA website), which account for about 75-80% of the global fertilizer production market. Prior to identifying AMIS, IFA noted that they had to go to individual data sources, and then combine the data for their own analysis. Accordingly, IFA greatly appreciates AMIS for having consolidated various data sources into a single platform, making agricultural data more easily available.

Public Administration

A respondent from a line ministry in Latin America explained how he uses AMIS data to support the Ministry of Economy. For example, he explained that he uses the data to identify countries where prices may be favourable and then advises the Ministry so they can incorporate this information into their purchasing decisions. He also noted that the comparisons between different data sources were very useful, and that Ministry staff conducted further research when estimates did not match between AMIS, USDA, and the IGC.

In addition, a respondent from a Government ministry in Israel appreciated the role that AMIS data plays in his work in advising decision makers in the country. He particularly highlighted how the data visualizations have been useful in providing information in an easily understandable manner.

Research

Researchers, educators, and students use AMIS data for a variety of research purposes. A search of "amis-outlook.org" in Google Scholar yielded 242 citations. The articles ranged from student research on food prices, to studies on commodity price dynamics and food security published in academic journals. One researcher interviewed after completing the questionnaire stated that he also uses AMIS data to get an overall understanding of what's going on in global markets to inform his future areas of research.

Conclusion and Recommendations

AMIS is recognized as an important source of accurate, reliable and timely information on global food supply and demand to help coordinate policy in the event of a crisis, but also to inform national governments and private sector companies in their (investment) decisions. The geographic distribution of data users is global representing every continent, with a particularly concentration in Europe and Asia, which each account for about one-thirds of all users.

AMIS data users are overwhelming satisfied with the quality of the data and with analysis provided in derived products such as the AMIS Market Monitor. Additionally, they appreciate the fact that the market database combines information from different data providers in a single platform, which prior to AMIS had to be compiled individually by users. The Supply and Demand analysis is one of the most used features, and users appreciate the data visualizations as simple to understand and use.

As for improvements, some users gave neutral and negative feedback regarding the availability and accessibility of metadata. To make metadata more visible, links and/or footnotes could be added directly into the data tables. Furthermore, metadata could be added into the data download files to make the metadata more accessible. Another option would be to direct users to the AMIS Supply and Demand Balances Manual, which contains detailed methodological information and definitions that would help users better understand the data. Also, the quality of the metadata could be improved, for example as regards explaining methodological differences between the three data sources (FAO/AMIS, IGC and USDA) and by including the actual date of publication (rather than the date of upload).

Lastly, given that private companies are major users of AMIS data, the AMIS Secretariat may want to explore opportunities for closer collaboration.