



Quality of Agricultural Statistics in Southern and Eastern Mediterranean Countries



The Medstat III programme in brief

Medstat III is the statistical cooperation programme with the European Union's partner countries of North Africa and the Eastern Mediterranean and is financed and managed by EuropeAid. The programme, which was officially launched on 28 April 2010, will run until the end of 2013, and has a budget of seven million Euros. It aims to strengthen the capacity of the statistical authorities of the EU's Mediterranean partners (Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestine, Syria, and Tunisia) to collect up to date, timely and relevant statistics, ensuring the reliability and coherence of available information.

Objectives

Medstat III builds on the achievements of the Medstat I (1996-2003) and Medstat II (2006-2009) programmes. It seeks to promote evidence-based policy-making and to foster democratic development through the use of robust statistical data. The programme aims to improve the quality and availability of data in six priority thematic sectors - agriculture, energy, migration, social statistics, transport, and trade and balance of payments - and will promote the increased dissemination and use of this data.

What does it do?

Medstat III is designed to strengthen the national statistics institutes and national statistical systems in the Mediterranean Partner Countries by improving their capacity to collect timely, relevant, and high-quality data necessary for political decision-making and good governance. Furthermore, it promotes the harmonisation of statistical data with European and international standards, and consolidates the exchange of data between partners.

The Medstat III experts work closely with their counterparts in the partner countries to carry out the project's activities and to transfer know-how and best practices. This is done through targeted technical assistance, and a series of workshops, seminars, training courses, and study visits.

Other activities include promoting a more user-friendly dissemination of statistics and a better understanding of the importance of statistics among the final users (politicians, governments, administration, private sector, journalists, universities, civil society, EU bodies, and international institutions).

Data availability

In a complementary activity, Eurostat collects annually a wide range of data from the Mediterranean partners.

These data can be consulted on-line at:

http://epp.eurostat.ec.europa.eu/portal/page/portal/european_neighbourhood_policy/enp_south/data_1/database

A synopsis of this data is also available in .pdf version in the Eurostat country profiles that can be consulted on-line at:

http://epp.eurostat.ec.europa.eu/portal/page/portal/european_neighbourhood_policy/enp_south/data_1/country_profiles

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Introduction

Despite the decline in its share of GDP over the years, agriculture continues to play an important and strategic role in southern and eastern Mediterranean countries (hereafter “Med countries”) in terms of food security, land management and rural livelihood and employment. In order to deal with the increasing complexities of agricultural development, comprehensive and reliable data on agriculture are essential.

Agricultural statistics in Med countries are produced to meet several needs, which include informing policymakers’ creation of appropriate agricultural policies, monitoring and evaluating national agriculture development strategy, producing national and satellite accounts for agriculture, and satisfying the needs of other important users, such as professional organisations, researchers, banks and investors.

Agricultural statistics in the Med countries suffer from a number of weaknesses, which include a lack of information on some agricultural domains, a lack of accuracy, multiple data sources, and a lack of coordination among agricultural statistics producers.

Efforts to improve the quality of agricultural data, better integrate agricultural statistics into the national statistical system, establish an integrated framework of surveys and databases, and elaborate adapted national agricultural statistics strategies should be constantly encouraged and supported.

In the framework of MEDSTAT III, proposals for national strategies for the development of agricultural statistics were drafted, identifying the weak points of current systems as well as suggesting improvements and analysing their implications. Roadmaps for their implementation were also drawn up.

As a complement to the aforementioned national strategy proposals, this report, prepared with technical assistance provided by the European Union, aims to provide a systematic analysis of the quality of agricultural statistics in Med countries, offering a detailed account of the current situation, providing comprehensive and coherent analysis of the quality of statistics according to common definitions and standards and, lastly, recommending measures for quality improvement.

After a presentation of the types of statistics collected by Med countries, the present report will measure the quality of Med countries’ agricultural statistics against European Statistical System standards, e.g., relevance, accessibility and clarity, coherence and comparability, accuracy, and timeliness and punctuality.

An additional section at the end of the report is dedicated to specific issues related to the quality commitment of agricultural statistics-producing institutions in Med countries.

Methodology

In December 2012 a questionnaire titled “Quality of Agricultural Statistics” was sent to Southern and Eastern Mediterranean partner countries participating in the MEDSTAT III project. The aim of the questionnaire was to collect information on and systematically assess the quality of agricultural statistics in Med countries while simultaneously raising awareness of the concept of statistical quality in the region’s agricultural statistics institutions.

The responses to this questionnaire led to the proposal of measures for improving the quality of agricultural statistics in the Mediterranean region. The idea of a questionnaire and this report is the outcome of two workshops organized within MEDSTAT III on the quality of agricultural statistics (Casablanca and Brussels, May 2011).

This exercise focuses on agriculture and food-related statistics¹ in Med countries — including both primary and derived statistics and indicators — irrespective of specific methodologies and statistical processes (e.g., surveys and censuses as well as administrative data collection processes). Some parts of the questionnaire and the report apply to the whole system of agricultural statistics compilation, while others are limited to specific statistical operations.

The questionnaire used to collect information is compliant with and follows the principles of the European Statistical System (ESS) ‘Code of Practice’ regarding statistical outputs. Key concepts in the questionnaire are defined in accordance with ESS standards.

The European Self-Assessment Checklist for Survey Managers (DESAP²) was used as a model in developing the questionnaire; however, the structure and questions of the DESAP questionnaire were largely adapted and modified to conform to the scope of the present report, regional specificities and the sector analysed, agricultural statistics.

Each country was sent one questionnaire to be completed by the national MEDSTAT coordinator for the agricultural sector in the National Statistical Institute in close cooperation with the Ministry of Agriculture. In some cases, depending on the specificities of each country and the organisation of the relevant statistical agency, a collaborative effort with experts from different departments of the organisation and/or experts from different institutions involved in the collection of agricultural statistics was required to adequately answer the questionnaire.

¹ The statistics analysed in this report are area and crop production, livestock data, supply/use of agricultural products, farm structure, land use, agricultural inputs, prices and income in the agricultural sector as well as agro-environment, food safety and security, rural development, fisheries and aquaculture and forestry statistics.

² <http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/documents/desap%20G0-LEG-20031010-EN.pdf>.

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Agricultural Statistics Collected by Med countries

Crop production statistics

Quantitative data on crop production, **area planted** and **irrigated area** are available for all Med countries annually, as well as sub-annually for Israel in the case of crop production data. The source of data is administrative in Algeria, Egypt and Israel, while sample surveys are taken in Jordan, Lebanon and Tunisia. Mixed sources are used in Morocco (administrative sources, sample surveys and expert assessment) and in Palestine (sample surveys and administrative sources, in addition to the census, which is carried out every 10 years). Egyptian data on crop production are considered by its statistics bureau to be 'highly reliable'; Lebanese, Palestinian and Tunisian data, 'reliable'; and Algerian, Israeli, Jordanian and Moroccan data, 'acceptable'. Israel considers its data on irrigated areas only to be 'workable'. **Post-harvest losses** have been estimated 40 years ago by Morocco only.

Data on the quantity of **processed crops** are available annually for Jordan, Lebanon, Morocco and Tunisia. With the exception of Tunisia, which considers its data 'highly reliable', the aforementioned countries consider their data 'acceptable'. Only Jordan undertakes an annual survey related to the production of processed crops. For the 3 other countries, the source of data is administrative. Data on the quantity of **stocks** of main crops are available for all Med countries except Algeria, Lebanon and Palestine. Data, where available, are produced annually and even sub-annually in Morocco and Tunisia. Data on stocks are considered 'highly reliable' by Egypt and Tunisia, 'reliable' by Jordan and 'acceptable' by Israel and Morocco.

Animal production statistics

Quantitative data on **livestock production** are available for all Med countries. These data are produced annually in all countries except in Israel and Morocco, where data are also available on a sub-annual basis. The source of data is administrative in Algeria, Egypt, Israel and Tunisia, whereas sample surveys are taken in Jordan, Lebanon and Morocco. Mixed sources are used in Palestine and Morocco (sample surveys and administrative sources). Data on livestock production are considered 'highly reliable' by Egypt, 'reliable' by Israel and Palestine and 'acceptable' by all other countries.

Quantitative data on **Livestock inventories**, i.e., the number of heads in the national herd, are available for all Med countries except Algeria and Egypt. Data are collected annually, except in Israel and Morocco, where inventories data are available also on a sub-annual basis. Administrative data are used in Israel and expert assessments in Morocco. Sample surveys are taken in Jordan, Lebanon (in addition to a specific decennial census) Morocco and Tunisia. Mixed sources are used in Palestine: a sample survey and administrative data, in addition to the census, which is carried out every 10 years. These data are considered 'reliable' by Israel, Palestine and Tunisia and only 'acceptable' by Jordan, Lebanon and Morocco.

Data on the quantity of **processed meat** are available for Jordan, Lebanon and Morocco annually and for Tunisia sub-annually. Data are collected from administrative sources, except in Jordan, where a sample survey is taken. Expert assessment is also used in Morocco in addition to administrative sources. Data are considered 'reliable' by Tunisia, 'acceptable' by Jordan and Morocco and only 'workable' by Lebanon.

Fishery and aquaculture statistics

Data on the quantity and value of **fishery and aquaculture production** are available for all Med countries except Algeria. Data are collected annually, except in Israel, where sub-annual data are available. The source of data is administrative in all countries, except Jordan, where a sample survey is taken, and in Lebanon, which is currently undertaking its first aquaculture production census. The results of an annual fishery survey are available for northern Lebanon only, and a more comprehensive survey is planned for the end of 2013. With the exceptions of Jordan and Morocco, which consider their data 'acceptable', data on fishery and aquaculture production are considered 'reliable' by all Med countries.

Forest production statistics

Administrative data on **wood production** from forests are available annually for Jordan and Morocco and every 10 years for Tunisia. Annual expert assessments serve as data in Algeria and Lebanon. Any data are available in Egypt, Israel and Palestine.

Annual data on forest production of **non-wood products** are available for Jordan, Morocco, Tunisia and Lebanon from administrative sources. In Lebanon, depending on the type of product, sample surveys and expert assessments are also used in parallel with administrative sources. Forest statistics are considered 'reliable' by Jordan and Tunisia and 'acceptable' by other countries.

Trade statistics of agricultural products³

Data on the quantity and value **import and exports** of agricultural products are available for all Med countries, except in Palestine, where only value data are recorded. Trade data are available annually except in Israel, where sub-annual data are also recorded, and in Lebanon and Morocco, where monthly data are available. Data are considered 'highly reliable' by Algeria, Egypt and Tunisia, 'reliable' by Jordan and Lebanon and 'acceptable' by Morocco and Palestine. Israel considers

its data on the quantity of traded products 'acceptable' and its value data only 'workable'.

Agricultural inputs statistics

The following agricultural inputs have been considered during the analysis of existing datasets on the Med countries: seeds, water, machinery, labour, pesticides, fertilisers, animal feed and animal vaccines and drugs.

Seed quantity data are available for all countries except Palestine. In Lebanon data on the quantity of seeds are available for imported seeds only. Data are collected annually in all countries as well as sub-annually in Tunisia. In Israel, a census is carried out every five years. The sources for seed data are administrative in Algeria, Egypt, Lebanon and Tunisia, whereas a sample survey is taken in Jordan and data for seeds in Morocco come from expert assessments. Data are considered 'reliable' by Egypt, Israel and Tunisia and 'acceptable' by all other countries.

Data on the quantity of water used are available for all countries except Algeria, Morocco and Palestine, and only partially in Lebanon, where a specific study is on-going. When available, data are collected annually, with sub-annual information also available for Tunisia. The source of these data is administrative, except in Jordan, where information is collected via sample survey. These data are considered 'reliable' by all countries except Jordan and Morocco which only consider their data 'acceptable'.

Data on **agricultural machinery** are available for all countries except Israel and Tunisia and are collected annually from administrative sources, except in Jordan, where an annual sample survey is taken. In Lebanon data are collected once every 10 years in the census. Data are considered 'reliable' by Egypt and Palestine and 'acceptable' by all other countries.

Data on **agricultural labour** are available for all countries except Egypt. Data are collected annually in Algeria from administrative sources, whereas sample surveys are taken annually in Jordan and Tunisia and

sub-annually in Israel and Morocco. Information on labour is included in the decennial census in Lebanon and Palestine. Data are considered 'reliable' by Palestine and Tunisia and 'acceptable' by all other countries where data are collected.

Data on the quantity of **fertilisers** used is available for all countries with the exceptions of Egypt, Israel and Palestine. Information is collected annually and sub-annually in Tunisia. With the exceptions of Morocco, where data come from expert assessments, and Jordan where estimates come from a sample survey, data come from administrative sources. Data are considered 'acceptable' by all countries except for Tunisia, which considers its data 'reliable'.

Data on the quantity of **pesticides** used is available for all countries, with the exception of Egypt and Palestine. Data are collected annually — with sub-annual availability in Tunisia — and every five years in Israel, by means of a special census. With the exceptions of Morocco, which uses expert assessments, and Jordan, where a sample survey is taken, data come from administrative sources. Data are considered 'acceptable' by Algeria, Jordan and Morocco, and 'reliable' by Israel, Lebanon and Tunisia.

Data on the quantity of **animal feed** are available for all countries except Palestine. They are collected annually in all countries as well as sub-annually in Israel and Tunisia. The source of data is administrative in all countries except Israel and Jordan, where a sub-annual census and an annual survey are taken, respectively. In Morocco expert assessments are used. Data are considered 'highly reliable' by Egypt and Israel, 'reliable' by Tunisia and 'acceptable' by all other countries.

Annual data on the quantity of **animal vaccines and drugs** are available for all Med countries and sub-annual data is available for Tunisia. Data come from administrative sources, except in Jordan, where a sample survey is taken, and in Morocco, where expert assessments are used. Data are considered 'highly reliable' by Egypt, 'reliable' by Algeria, Lebanon,

Tunisia and Palestine, and 'acceptable' by all other remaining countries.

Prices of agricultural products

Producer price data for agricultural products, fisheries and forest products are available for all Med countries except Algeria. Sub-annual data are usually available, except in Egypt, Jordan, Lebanon and Morocco where only annual data are available. The source of data is administrative in Egypt, Israel, Morocco and Tunisia, while sample surveys are taken in Jordan, Morocco, Lebanon and Palestine. Data are considered 'highly reliable' by Egypt and Palestine, 'reliable' by Lebanon and Tunisia, and 'acceptable' by the other countries.

Data on **wholesale prices** are available for all Med countries. Data are compiled sub-annually in Algeria, Israel, Morocco and Palestine and annually in all other Med countries. Data are collected from administrative sources, with the exception of Jordan, Lebanon, Morocco and Palestine, where sample surveys are taken. Data are considered 'reliable' by Egypt, Palestine and Tunisia and 'acceptable' by the other countries.

Agricultural input prices are available for all countries except Palestine. Data are compiled sub-annually in Israel, Morocco and Tunisia and annually in all the other countries. Data are generally collected from administrative sources, with the exceptions of Israel, Jordan and Lebanon, where sample surveys are taken. Data are considered 'reliable' by Egypt and Tunisia and 'acceptable' by the other countries.

Economic and structural data

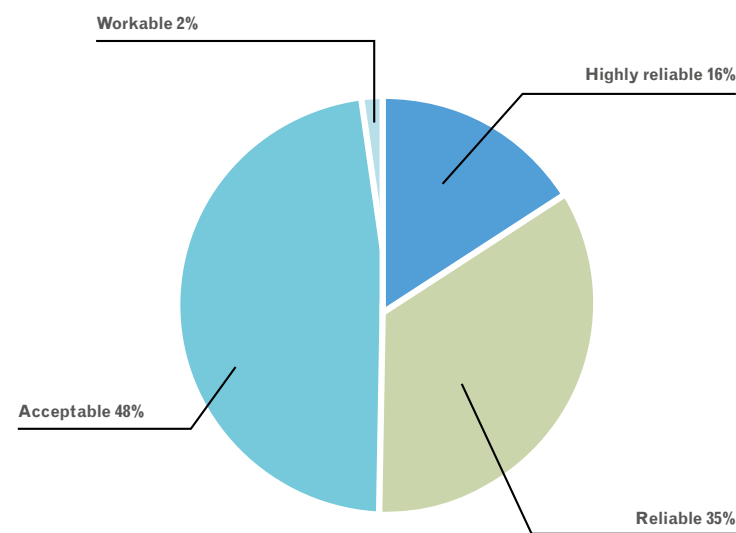
Annual data on the **cost of production** are available for Algeria, Egypt, Lebanon and Palestine; these estimates come from administrative sources in Egypt and Palestine, expert assessments in Algeria and a sample survey in Lebanon. Data are considered 'reliable' by all mentioned countries, except for Lebanon, which considers its data 'acceptable'.

³ Detailed analysis of the quality of trade statistics have been also performed under the MEDSTAT III programme.

Household income statistics are available for all countries except Algeria, Israel and Palestine. Data are collected annually from administrative sources in Egypt, Morocco (in addition to expert assessments) and Tunisia, whereas sample surveys are taken in Jordan and Lebanon every five years in both countries. Data are considered 'reliable' by Egypt, Lebanon and Tunisia, and 'acceptable' by Jordan and Morocco.

Data on **agricultural subsidies** and **public investment** in agriculture are available for all countries except Egypt and Palestine. Data are generally compiled annually, with sub-annual data also available for Tunisia. Data come from administrative sources, except in Jordan, where a sample survey is taken. Data are considered 'highly reliable' by Algeria and Tunisia, 'reliable' by Israel and Lebanon, and 'acceptable' elsewhere.

Farm structures and propriety rights statistics are available for all countries except Egypt and Israel. Data are normally obtained from censuses, which are carried out annually in Algeria and every 10 years in Jordan, Lebanon and Palestine. In Palestine, a sample survey is additionally carried out every five years. In Tunisia data come from a decennial sample survey. Data are considered 'acceptable' by Jordan and Morocco, and 'reliable' elsewhere.



How EU partner Med countries appraise the reliability of agriculture related datasets

Relevance

Relevance is the degree to which statistics meet current and potential users' needs and priorities. It refers to whether all statistics that are needed are produced and reflected in the work programme, and whether user satisfaction is monitored.

The quality of agricultural statistics encompasses how well they meet users' need for and expectations of statistical information. The crucial first step toward data quality improvement is to identify the primary users of agricultural statistics and set up a constructive dialogue with them.

- ▶ **The primary users** of agricultural statistics in the Med countries, in order of importance (as reported by respondents), are:
 - the Ministry of Agriculture;
 - other National Statistical Office departments (e.g. for national accounts compilation);
 - other governmental departments;
 - international organisations such as the Food and Agriculture Organisation (FAO), the World Bank, the European Union, the Arab Organisation for Agricultural Development and the African Development Bank;
 - Farmers' organisations.

Other users include:

- students, researchers and academia, non-governmental organisations, banks (including the central bank) and the business community.

A good practice to improve the relevance of data is to establish a **process of review** in order to assess whether programmes meet the needs of users of agricultural statistics. This should take place periodically within the National Statistical Office (NSO) as well as with the primary users of agricultural statistics.

- ▶ Only Egypt responded that it has in place an established, periodic process of review **within its NSO**. In Algeria and Lebanon there is a partial process in place. In the other five countries, there is no internal consultation process.
- ▶ Egypt and Israel responded that an established process of consultation takes place periodically **with agricultural statistics users**. In Morocco and Jordan, no such process is in place. In the other countries this takes place 'only partially'.

Coordination mechanism between producers and users of agriculture statistics in Jordan dialogue

Considering that "reliable agricultural statistics are the cornerstone of proper agricultural development planning and setting development policies and information and agricultural statistics in Jordan fall short of meeting the required level" the Jordanian strategy for agricultural development suggests establishing a **permanent committee of experts for agricultural statistics**. The committee has been put in place and it is composed of representatives of the Department of Statistics (DoS), the Ministry of Agriculture (MoA), the Land and Survey Department and experts from the private and public sectors. The committee defines the data needed, prepare the scope of work for collecting statistics, define the agencies responsible for collecting statistics and review statistical data before its release. This committee is very active and plays an important role in avoiding the publication of conflicting data and constitutes an opportunity for the DoS and for the MoA for discussing the possibilities of coordinating their efforts for producing agricultural statistics.

From the Proposal for a National Strategy for the Development of Agricultural Statistics in Jordan, MEDSTAT III June 2013.

Consultations with users should include a review of the **definitions of statistical concepts** used in agricultural statistics.

- ▶ In Algeria, Egypt and Israel, user consultations include a review of the definitions of statistical concepts. In Tunisia this is done when designing questionnaires. Lebanon and Palestine declare that they only partially review definitions, and no review exists in the other countries.

Implementing regular surveys to determine **user satisfaction** and needs with respect to agricultural statistics is a good practice to improve the relevance of agricultural statistics.

- ▶ In Egypt and Palestine and, partially in Israel, regular surveys are in place. No surveys are taken in the other countries.

Med countries cited the following reasons why certain user needs are not fully satisfied:

- ▶ a lack of financial and material resources needed to compile statistics related to agriculture,
- ▶ a lack of structure in user feedback processes,
- ▶ a lack of a well-established system for needs assessment and user satisfaction evaluation,
- ▶ a lack of qualified human resources to carry out satisfaction surveys.

Accessibility and Clarity

Accessibility and clarity refers to the presentation of statistics in a clear and understandable form, released in a suitable and convenient manner, available and accessible on an impartial basis with supporting metadata and guidance.

Several factors determine the accessibility and clarity of agricultural statistics. Listed below are accessibility and clarity features reported by Med countries, by order of importance.

All Med countries reported:

- ▶ the availability of free publications on agricultural statistics.

In almost all countries:

- ▶ results, both hard copies and on the Internet, are presented clearly and neatly;
- ▶ "Definitions and Methods" reports aid in the correct interpretation of the results;
- ▶ official statistics are available online, free of charge, on the agriculture section webpage.

In five countries:

- ▶ a catalogue of publications is available;
- ▶ publications are accompanied by press releases to facilitate the understanding of published data and avoid misinterpretation;

The following measures were suggested to improve the relevance of agricultural statistics:

- ▶ increased training and availability of human resources and greater financial resources to develop an integrated system of agricultural statistics collection,
- ▶ improved consultation and interaction with statistics users, user priority reviews and evaluations of emerging needs by organising 'agricultural statistics information days', for example, or developing questionnaires to analyse user needs and satisfaction,
- ▶ improved coordination between agricultural statistics producers and their partners in planning and implementing statistics collection.

- ▶ statistics experts answer questions from people seeking detailed information on data production;
- ▶ statistics are available on CD-Rom;

Four countries

- ▶ provide access to research tools, access by subject, catalogue search and an internal search engine.

Metadata are defined as a complete and unambiguous description of the data compilation process including sources, concepts, definitions and methods.

- ▶ Metadata are disseminated in five countries in a paper publication; among these countries, all but Tunisia publish metadata on the Internet as well. With the exception of Israel, these countries record metadata according to a standardized metadata system. Algeria, Lebanon and Jordan report that metadata are not disseminated; however, Algeria does comply with some FAO standards of international customs nomenclature in external trade statistics.

The following quality indicators related to accessibility and clarity are systematically documented:

- ▶ the number and types of means of disseminating statistics in Egypt, Israel, Jordan and Palestine;
- ▶ the number of subscriptions/purchases of each of the key paper reports on agricultural statistics and rate of completeness of metadata (the ratio of the number of provided metadata elements to the total number of applicable metadata elements) in Egypt, Jordan and Palestine
- ▶ the number of agriculture database hits, (page visits, information viewed or downloaded, divided by theme) in Palestine and Egypt.

The following measures have been identified to improve the accessibility and clarity of agricultural statistics:

- ▶ improvements to the use of communication and information technologies for online publications, data dissemination and the creation of a website dedicated to agricultural statistics
- ▶ improvements to the quality of metadata, which should be standardised according to international statistical classifications and nomenclatures and updated regularly.

Coherence and Comparability

Coherence and comparability refer to statistics that are consistent internally, over time and comparable between regions and countries; it is possible to combine and make joint use of related data from different sources.

The Coherence of two or more statistical outputs refers to the degree to which the statistical processes by which they were generated used the same concepts - classifications, definitions, and target populations - and harmonised methods.

Comparability is the extent to which differences between statistics from different geographical areas, non-geographical domains, or over time, can be attributed to differences between the true values of the statistics.

It is important to assess the **coherence of agricultural statistics** and determine whether they can be reliably combined with statistics from other sources, such as administrative sources and other important non-official statistics.

- ▶ Four countries reported no major differences with respect to coherence; two countries (Israel and Lebanon) report few differences; and two countries (Jordan and Palestine) some differences.

Diffusion and dissemination of agriculture statistics in Tunisia

Dissemination policy of agricultural statistics in Tunisia is mainly relying on paper publications. Information technology and electronic tools are rarely used; however, efforts are underway to integrate modern techniques for data dissemination. Time required for publication is usually relatively short after the validation of the results. However, the time between the end of the phase of data collection and validation are unreliable. Publication of agricultural statistics does not follow a coherent and transparent dissemination policy. The results of some of the investigations are often released as raw data without analysis and without graphics or related maps.

From the National Agricultural Statistics Development Strategy in Tunisia, MEDSTAT III April 2013

It is also important to assess the **comparability** of agricultural statistical outputs over time, as comparability **over time** can be affected by changes in concepts and/or methods.

- ▶ Five countries reported no restrictions on comparability; Israel reported that comparability over time is "slightly restricted"; and Palestine reported that comparability over time is restricted 'to some extent'.

Finally, it is important to assess the comparability of agricultural statistical outputs **across domains** (e.g., production data, structural data, business statistics, etc.).

- ▶ Five countries reported no major differences with respect to other important related statistics, whereas three countries — Israel, Lebanon and Palestine — believe that some differences exist with respect to other important related statistics.

The identification of the reasons for the lack of coherence and comparability in the outputs of statistical processes can provide important indications for improving quality.

When countries were asked about the reasons for the lack of coherence and comparability:

- ▶ four countries replied that there are differences in data item definitions, classifications and methods for data collection, capture and editing;
- ▶ two countries responded that data differ in geographic coverage, reference period and methods of imputation and estimation;
- ▶ one country replied that data differ with respect to concepts related to the target population (units and coverage), frame population methods, data source methods and sample design.

Accuracy

The accuracy of statistical outputs in the general statistical sense is the degree of closeness of estimates to the true values.

The assessment of accuracy requires determining what level of accuracy has actually been achieved in statistical outputs. The level of accuracy can be determined by measuring both sampling and non-sampling errors. The latter include coverage errors, measurement errors, non-response errors and processing errors.

It is good practice to compile an **overall accuracy assessment** for the main agriculture-related statistical processes (surveys, censuses or administrative source processes).

Measures that have been suggested to improve the coherence and comparability of agricultural statistics are:

- ▶ improvements to the harmonization of concepts, definitions and classifications for the various domains within agricultural statistics and beyond; strengthening dialogue with the other ministries, in particular the Ministry of Agriculture; and improving coordination among the different producers of agricultural statistics;
- ▶ efforts to improve the implementation of an integrated statistical information system without duplication and release conflicting statistics.

The use of administrative sources in Med countries

Several governmental and professional organizations in Med countries provide information on the agricultural sector based on administrative sources. In particular, this is relevant to production, trade, prices, public investment and agricultural subsidies data (see Annex I, where main data sources are presented for each agricultural statistic domain). In an effort to reduce the burden of surveys, information provided by these organizations is often included in statistical publications with references to the agricultural sector. Comparisons between the results of the surveys and the information available from administrative sources are regularly performed to ensure the accuracy of the sources. Definitions and concepts used by governments and professional organizations are also checked against those used for statistical purposes.

- ▶ All Med countries responded that they compile an overall accuracy assessment (five countries do so completely and three partially).
- ▶ In the case of Egypt and Tunisia, this assessment includes, a systematic presentation of the methodology used in each process. This presentation is only included for some processes in Algeria, Jordan and Morocco, and no such presentation is made in Israeli, Lebanese and Palestinian assessments.

Measures that have been identified to reduce sampling errors are:

- ▶ improvements to the quality of the sampling frame (conducting, for example, regular agricultural censuses) and increasing sample size;
- ▶ improvements to coefficients of variation estimates;
- ▶ the introduction, in the sampling process, of new geomatic techniques (remote sensing and Geographical Information Systems, for example);
- ▶ the adoption of methodologies tailored to each survey.

- ▶ The assessment includes the identification and a summary discussion of the main sources of random and systematic error in statistical outputs (with a special focus on key estimates) of all processes in Egypt, Morocco and Palestine and for some processes in the Tunisian assessment. This is not included in Israeli, Jordanian and Lebanese assessments.

Sampling errors

Coefficients of variation are key indicators useful for the measurement of data accuracy.

- ▶ All Med countries calculate the coefficients of the main sampling surveys, with the exceptions of Israel and Tunisia, which rely heavily on administrative records.
- ▶ The magnitudes of the coefficients of variation of these surveys are considered 'acceptable' by all countries, with the exception of Lebanon, which considers them only 'partially acceptable'.
- ▶ Only Algeria, Egypt and Palestine publish the main sampling surveys' precision estimates as quality indicators.

Coverage errors

Sampling frame in Med countries and year last updated

	Algeria	Egypt	Israel	Jordan ⁴	Lebanon	Morocco	Palestine	Tunisia
Farm register	X	X						
Holding list for agricultural census		X		X	2010		2010	
List of villages		X		X			2007/2008	
Area frame		X				2013		
Multiple frames	X			X		2013		2004

X: year no available

⁴ For sampling localities

Overcoverage results when wrongly classified units (that are in fact out of scope) or units that do not exist in practice are included in the frame. Med countries were asked to assess the problem of overcoverage in the production of agricultural statistics.

- ▶ There is nearly no overcoverage (i.e. there is only a very small difference between the frame and the target population) with the exception of Lebanon, where slight overcoverage is reported (i.e. few units not belonging to the target population were included in the frame), and Israel, where some overcoverage is reported (i.e. some units not belonging to the target population were included in the frame).
- ▶ Palestine is the only country that systematically documents overcoverage rates as a quality indicator.

Undercoverage results when relevant units are not included in the frame. Med countries were also asked to assess the problem of undercoverage.

- ▶ The only countries that report undercoverage are Lebanon and Israel, which reported 'some' undercoverage (i.e., some units belonging to the target population were not included in the frame).

Measures that have been identified for the reduction of coverage errors are:

- ▶ regular and consistent updates of frames (including farm registers);
- ▶ improvements in the comparison with different and alternative frames.

Measurement errors

Measurement errors are errors that occur during data collection and cause the recorded values of variables to differ from their true values. Their causes are often related to survey instruments (e.g., the questionnaire), erroneous respondent data and interviewer influence.

Questionnaire design:

It is good practice to test new questions and questionnaires.

- ▶ New questions and new questionnaires are systematically tested in all Med countries. This is done 'only partly' in Algeria (only for the

census) and in Lebanon. Tunisia is carrying out a pilot survey where questions and questionnaires are tested.

It is good practice to review questionnaires with interviewers.

- ▶ Questionnaires are reviewed with interviewers in all countries (or at least "partly", as declared by Algeria and Lebanon), with the exception of Jordan.

All countries, when asked to assess the quality of questionnaires used for surveys, reported that the design of their questionnaires meets most of the criteria that determine the quality of a questionnaire and that these criteria are sufficiently taken into consideration, although some items could be improved. In particular, countries were asked to indicate which of the quality indicators are included in their surveys. By order of importance, quality criteria included are as follows:

In all countries:

- ▶ separate sections have their own titles and headings;
- ▶ words and concepts are used consistently;
- ▶ each question is adequately justifiable;
- ▶ time reference periods and units of response are always clear.

In almost all countries:

- ▶ questions follow the respondents' logic;
- ▶ the order of questions does warrant an optimal direction through the filters;
- ▶ questionnaires are professional, business like and attractive in terms of design;
- ▶ in the introduction, the title or subject of the survey and the sponsor are identified, the purpose of the survey is explained, the respondent's cooperation is requested, and information about the conducting authority as well as questionnaire confidentiality are provided;
- ▶ Questions are applicable to all respondents and/or easy to answer

Moreover:

- ▶ Instructions and additional guidance are included in four countries' questionnaires;

- ▶ in three countries, graphic elements such as colour, shading, illustrations, symbols or bold writing are employed in an optimal way to indicate where respondents should answer or to direct their attention;
- ▶ two countries' questionnaires include a space on the last page for additional comments;
- ▶ on the last page, there is an expression of appreciation;
- ▶ one country includes a free phone number for contact in the case of questions;
- ▶ Morocco's questionnaires also include a free phone number (Flote) for interviewers, supervisors and central administration.

Measures identified to improve questionnaires are:

- ▶ better review of questionnaires with interviewers, regular meetings to evaluate the progress of each survey and analysis of the difficulties encountered along with proposed suggestions and solutions to the various problems;
- ▶ systematic pre-testing of new questionnaires;
- ▶ expanded questions to better meet users' needs, including topics not often covered at present (the cost of production and prices).

Other measures to improve questionnaire design

In addition to the suggestions proposed by countries for the improvement of the questionnaire designs, the training course organized by MEDSTAT III on questionnaire design adopted the following recommendations:

- The development of any questionnaire should follow a global approach;
- A questionnaire should respond correctly to the objectives of the survey;
- A tabulation plan should precede the drafting of a final questionnaire;
- Well defined questions in order to precisely respond to the survey objectives
- Collected information should be sufficient for filling out the statistical tables defined in earlier stages: The writing of questions should be as clear as possible and should be understood in the same way by the questionnaire designer, the respondent and the enumerators;
- Questionnaires should be submitted to pre-field and field testing and post-evaluation
- Better coordination of all questionnaires used for agricultural surveys in the country.

Interviewer preparation:

Interviewer preparation is crucial to producing high-quality data. When countries were asked how interviewers are prepared:

- ▶ Egypt, Jordan, Morocco and Palestine replied that interviewers receive intensive training, which consists of different training phases, or at the very least preparatory training (for example, in communication) with a special course of instruction, and they are provided with a well organised interviewer manual;
- ▶ Algeria, Egypt and Tunisia replied that interviewers are adequately trained within one session and are provided with interviewer materials;
- ▶ Egypt and Jordan responded that interviewers receive special training on refusal conversion techniques and on how to motivate people to participate in surveys;
- ▶ Egypt and Lebanon responded that interviewers get some training and/or an interviewer manual, but that they are not sufficiently prepared;
- ▶ Morocco responded that interviewers attend and participate in meetings on the preparation and design of questionnaires.

Measures identified to improve interviewer preparation are:

- ▶ continuous training with periodic sessions at the start of each survey. These should include training in communication and other interview-related areas;
- ▶ improved selection of staff according to specialization and experience. Newly recruited staff should always be trained;
- ▶ the use of fully-developed and engaging training methods, which include, for example, the use of illustrations and practical applications;
- ▶ systematically making all documentation relevant to the survey available to interviewers (improved instruction manuals, questionnaires, maps and, when possible, satellite pictures and GPS).

Non-response errors

Non-response is the failure of a sample survey (or a census) to collect data for all data items in the survey questionnaire from all population units designated for data collection. **Unit non-response** occurs when no data are collected about a population unit designated for data collection. **Item non-response** occurs when only some data items are collected for a designated population unit.

It is good practice to systematically document the following quality indicators related to non-response errors for key estimates. Countries reported systematically documenting the following quality indicators:

- ▶ unit response rate, in Egypt, Jordan, Morocco and Palestine;
- ▶ item response rate, in Jordan and Morocco.

Rates of non-response are assessed as follows:

- ▶ four countries reported a low unit non-response rate;
- ▶ two countries, nearly no unit non-response; and one country, Lebanon, an average unit non-response rate;
- ▶ two countries, Tunisia and Algeria, are currently in the process of evaluating non-responses, and organising them into sub-categories (refusals, not contacted, not at home, not found, incapacity, lost schedule). This is only partly true for Lebanon and Morocco and is not the case for the other countries;
- ▶ three countries reported nearly no item non-response; three, little item non-response; and one country, Lebanon, some item non-response.

Measures identified to reduce unit and item non-response are:

- ▶ improvements to the non-response evaluation process;
- ▶ the development of adapted quality indicators related to non-response errors;
- ▶ the elaboration of a list of replacing units in the case of unit non-response;
- ▶ possible media events and an information day prior to the survey.

Processing errors

Once data have been collected, they go through a number of processes before final estimates are produced: coding, keying, editing, weighting, tabulating, etc. Errors introduced at these stages are called processing errors.

- ▶ When Med countries were asked how they rate the necessity of editing raw data, five countries reported that raw data are sufficiently checked during the collection process by integrated pre-programmed plausibility checking systems. Three countries reported that few errors that needed to be corrected are discovered in the original data.

The methods chosen for data editing greatly impact data quality and, as such, should be pretested.

- ▶ The editing methods of all Med countries include a combination of automated and manual methods, with the exception of Jordan, which uses only automated methods.
- ▶ Editing methods are pretested in all countries with the exception of Algeria.
- ▶ The persons in charge of manual editing are provided with written, detailed and up-to-date instructions in all countries (only 'partly' in Lebanon) with the exception of Algeria.

As regards editing procedures applied to the raw data, all countries use:

- ▶ logical editing (based on logical relationships);
- ▶ comparisons with data from previous collections of the same statistics or from other sources.

Almost all countries include:

- ▶ a value range check for every variable.

Some countries include:

- ▶ a combination of logical and statistical editing;
- ▶ statistical tests of procedures, outlier analysis techniques;
- ▶ empirical procedures.

Error statistics in Morocco

The Statistics Division of the Ministry of Agriculture and Maritime Fisheries of Morocco has a recording system that allows to calculate statistical processing errors made by data entry operators and a programme to check the consistency of specific data in each survey; it determines the number of logical errors for each variable in the questionnaire. Furthermore, each investigator code is entered at the end of the questionnaire and the number of errors per investigator is calculated. Similarly, each data entry operator code is entered into the input system and error statistics are provided by operator.

Total error

Assessing the accuracy of data should involve analysing the total error associated with the estimates.

- ▶ Error statistics are calculated in Egypt, Morocco and Tunisia as a quality measure of the surveys and to help formulate suggestions for improvements to future surveys. The other countries reported that they do not calculate error statistics.
- ▶ When asked if countries have any information about the source(s) of error, they almost all reported that the sources of error are partly known and that errors are mainly measurement based.

Imputation is the procedure for entering a value for a specific data item where the response is missing or unusable:

- ▶ Values for statistics are imputed in Egypt, Jordan, Morocco and Palestine. This is not the case in Lebanon and Tunisia.

Area sampling frame for agricultural surveys in Morocco

The methodologies used by the Statistics Division of the Ministry of Agriculture and Maritime Fisheries of Morocco are robust and in accordance with international standards. Yet the introduction of new technologies is an on-going process. The recently introduced use of Geographical Information Systems (GIS) in the census for fruit plantations has improved the quality of collected information and helped developing a coherent GIS database. The area digitalisation and the update the area sampling helped reducing non-response and elaborating appropriate stratification of the area sample.

In comparison with survey methods based on lists, area sampling better allows to exploit the significant technological progress in the field of data processing, including the use of satellite imagery, GIS and GPS. The area frame provides complete coverage of the universe to study. The estimates from the area sample are therefore not subject to errors of coverage, which is a major problem when samples based lists are used. In addition, in the case of closed segments, farmers' statements are verifiable in the field and a significant reduction of survey errors has been noted. The implementation of the area frame is a complex and heavy task which has the advantage of a rigorous methodology that is widely understood and integrated in the Moroccan agriculture statistical system.

From the National Agricultural Statistics Development Strategy in Morocco, April 2013

- ▶ The chosen imputation method is automated in Jordan, manual in Palestine and a combination of both in Egypt and Morocco.

Error statistics from previous surveys are important in order to build upon and improve editing procedures and validation rules:

- ▶ Error statistics are available for Egypt and Jordan and partially available for Lebanon and Palestine. These are not available for Algeria, Morocco and Tunisia.

Measures identified to reduce overall errors are:

- ▶ greater and more focused rules for auditing and controlling questionnaire;
- ▶ increased entry checks to eliminate input errors and improve editing procedures (a combination of statistical and logical tests) and greater use of error statistics;
- ▶ the application of the latest techniques, such as "Automatic Document Recognition (ADR)" and "intelligent input";
- ▶ the integration of control programmes to check consistency during data entry;
- ▶ the introduction of automatic imputation procedures based on scientific methods (substitution, use of estimators, group-average, fixed set of values, etc.);
- ▶ the introduction of well-defined correction and editing procedures written in a clear and friendly way;
- ▶ staff participation in training related to the data entry programme as well as for auditing mechanisms.

Timeliness and Punctuality

The timeliness of statistical outputs is the length of time between the event or phenomenon they describe and their availability.

Punctuality is the divergence from the dissemination time schedule that is publicised in advance (from the official release calendar), laid down by regulations or previously agreed among partners.

Timeliness is a crucial element of data quality. In fact, it is one of the most important for the effective use of results. It is essential to produce timely results and to stick to established deadlines when they exist.

- ▶ A calendar for the publication of the results of the main agriculture related statistical processes is available for all Med countries, with the exception of Lebanon, where this is only partially available.
- ▶ Planned publication dates for the main statistical publication (comprehensive tables with results including web publications) are nearly always respected in Tunisia and Jordan, usually respected in Palestine and Israel (for > 80% of the publications) and mostly respected (> 50% of the publications) in Algeria, Egypt and Morocco. A frequent, long delay is reported only by Lebanon.
- ▶ The average time lag between the reference period and the first publication of preliminary or final results, timeliness, largely differs among countries and, in particular, is:
 - 7-15 days in Morocco;
 - 1 month in Jordan and Tunisia;
 - two months in Israel;
 - approximately four months in Egypt;
 - 6-12 months in Lebanon;
 - 10 months in Palestine.
- ▶ The average time lag between the planned

publication date and the actual publication date, punctuality, is

- 10 days in Morocco,
- around one month in Algeria and Palestine;
- 1-3 months in Israel;
- two months in Tunisia;
- approximately six months in Egypt;
- 6-12 months in Lebanon.

- ▶ Israel, Jordan and Palestine systematically document the following quality indicators related to timeliness and punctuality: “average time between the end of reference period and the date of the first results” and “punctuality of time schedule of effective publication”. The latter indicator is also documented by Egypt.

Measures identified to improve timeliness and punctuality are:

- ▶ The strengthening of resources by improving the technological systems in use in order to reduce manual work and the time required to process data;
- ▶ Production of systematic reports on the development of timeliness and punctuality quality indicators.

Commitment to Quality

Statistical authorities are committed to quality. They systematically and regularly identify their strengths and weaknesses to continuously improve processes and product quality.

Quality commitment is when statistics-producing institutions commit themselves to work and cooperate according to principles laid out in a Quality Declaration or according to specific quality principles.

- ▶ Regarding the production of agricultural statistics, Egypt, Jordan and Palestine declared that **product quality** is regularly monitored according to specific quality principles. Algeria, Israel, Morocco and Tunisia reported that this is done only partially, and in Lebanon this is not done at all.

Quality procedures should be in place to monitor the quality of the collection, processing and dissemination of agricultural statistics.

- ▶ **Quality procedures** are in place in Egypt, Jordan, Palestine and Tunisia. In Algeria, Israel, Lebanon and Morocco, they are in place only partially. Lebanon reports no quality procedures in place.

Quality guidelines and quality reports for agricultural statistics should be drafted and publicised, documents should be spelled out in writing and made known to the public.

- ▶ **Quality guidelines** and **quality reports** are documented by Egypt, Jordan, Palestine and partially documented in Tunisia. They are not documented by the other countries.

A Quality unit and a Quality network should be set up in institutions producing agricultural statistics.

- ▶ **Quality units** and **quality networks** are currently only in place in Egypt, Jordan and Palestine.

Quality action plans aimed at systematizing and generalizing quality procedures across organizations producing agricultural statistics should be developed and implemented.

- ▶ **Quality action plans** have been developed and implemented in Palestine and Jordan and partially developed and implemented in Algeria, Morocco and Tunisia.

Fully-integrated overall quality management systems, such as Total Quality Management, aim to create a “culture of quality” and are based on a number of fundamental values⁵.

- ▶ A fully-integrated overall **quality management system** is in place in Egypt, Jordan and Palestine for the production of agricultural statistics.

Certification is the process of verifying that a product or service complies with standards of quality management and is followed by the validation of the system by an external accredited agency (audit certification).

- ▶ The Palestinian Central Bureau of Statistics, the institution responsible for agricultural statistics in Palestine, has been awarded a certification of conformity with ISO 9001 standards. The organisation responsible for agricultural statistics in Lebanon intends to apply in the future.

⁵ According to “Total Quality Management” philosophy of management fundamental values are: Executive Management, Training, Customer Focus, Decision Making, Methodology and Tools (approach by procedures/processes), Continuous Improvement and Employee Involvement.

Conclusions

An efficient system of agricultural statistics in each of the Southern and Eastern Mediterranean countries, one that produces relevant and reliable data, is crucial in order to develop, analyse, monitor and evaluate agricultural policies and ensure their success. Agricultural statistics are also important in identifying the opportunities and limitations of the sector as well as implementing a country's agricultural development plans.

All statistics produced in Southern and Eastern Mediterranean Countries partner countries are relevant, but current systems of agricultural statistics only partially meet the needs of users, i.e. policymakers, professional organizations, universities, banks, investors and to establish reliable agricultural satellite accounts and national accounts.

This report is a synthesis of the compliance of agricultural statistics with international standards related to the quality of statistics, in particular through comparison with the Code of Practice of European Statistics. Statistics in Med countries are reported to be derived from well-established and scientific methods and are published on a regular basis.

However, several weaknesses have been reported:

- ▶ Consultations with users are not systematic and user satisfaction surveys are not conducted;
- ▶ Coordination between data producers and data users is lacking and the flow of information between them is often weak;
- ▶ Large discrepancies between the different sources are not reported; however, particular attention must be paid when comparing data from statistical surveys and data from administrative sources or other technical agencies;
- ▶ The concepts used do not change from one survey to another, from one year to another and from

one region to another within the same country. Consistency and comparability is therefore ensured in most cases. However, improvements to the harmonization of concepts, definitions and classifications for the various domains within agricultural statistics are needed;

- ▶ In publications, statistics are presented in tabular form and sometimes graphic and temporal comparisons are provided; methodological summaries are also provided in each publication. However, the methodological aspects of statistical processes and information about the quality of statistical results are often not produced and very few analyses are performed. Often no procedures for the provision of micro- and metadata are established;
- ▶ A significant number of agricultural datasets are only estimates made by agricultural experts;
- ▶ In most cases, if errors are discovered, they are not published; Errors in data collection are often not assessed or documented;
- ▶ Field checks are often irregular and unsystematic; however, this weakness is offset by the experience of surveyors who work for external services;
- ▶ The adoption of the area sample allowed some Med countries to develop new and more efficient statistical approaches and to check farmer declarations against aerial photographs; this might be encouraged in other countries, if appropriate;
- ▶ The punctuality and timeliness of statistics are generally satisfactory even if delays in obtaining results are often delayed;
- ▶ Hard copies of most of the statistics produced are published. However, web-based dissemination tools are not well developed in most of the countries;

- ▶ A number of statistics produced are not periodic nor do they follow a specific release schedule. Schedules of results dissemination are often not publicised and the dissemination of agricultural statistics is not done according to standard schedules.

The institutions responsible for data collection in the Med countries have considerable experience in agricultural statistics. These organizations often use internationally recognized modern techniques and scientific methods are well understood and widely used.

However, in order to meet the growing needs of different policymakers and researchers, who require reliable and timely statistical information, agricultural statistics information systems should better coordinate efforts in this area and increasingly mobilize additional resources, especially human resources.

The systems in use only partially provide the statistical information necessary for the design and implementation of agricultural policies. They are very

often narrowly focused on primary crop and livestock productions. Statistics related to horticultural and fruit plantations are in several cases not sufficiently compiled. Data on farm structures are often compiled exclusively by means of a decennial census and surveys and microeconomic data are, in most cases, very irregular and partial.

Some countries have never carried out a general agriculture census or last did so a long time ago. This does not allow for a comprehensive overview of the national agriculture sector or for an updated frame list from which samples of farms can be taken.

The completion of a set of ambitious statistical operations is required to meet the needs for statistical data, but statistics-producing institutions lack the human resources necessary for the production of agricultural statistics. The agricultural statistics system should evolve to produce timely, reliable and relevant information to better inform agricultural development policymakers in the Med countries.

References

- DESAP The European Self-Assessment Checklist, 2010 European Commission, Eurostat ;
- ESS Handbook for Quality Reports, 2009 Edition, European Commission, Eurostat ;
- ESS Standard for Quality Reports, 2009 Edition, European Commission, Eurostat ;
- European Statistics Code of Practice European Commission ;
- Proposal for a National Agricultural Statistics Development Strategy in Jordan, MEDSTAT III July 2013 ;
- Note Stratégique pour le Développement des Statistiques Agricoles au Maroc, MEDSTAT III, Septembre 2012 ;
- Note Stratégique pour le Développement des Statistiques Agricoles en Tunisie, MEDSTAT III Avril 2013 ;
- Report on the Training course on questionnaire design, Istanbul 18- 20 July 2011 and Tunis 26- 29 September, 2011, Medstat III ;
- Report on the Workshops on Improving Data Quality in Agriculture Statistics, Casablanca, 16-19 May and Brussels, 30 May-2 June 2011, Medstat III ;

Annex I

Main Sources of Data and Estimates (with indication of frequency)

Administrative sources	Expert assessment
Sample surveys	Combination of sources
Census	Not available

Main sources of data and estimates	Algeria	Egypt	Israel	Jordan
Crop production statistics				
Crop production: quantity	Administrative, annual	Administrative, annual	Administrative, sub-annual	Sample survey, annual
Area planted	Administrative, annual	Administrative, annual	Administrative, annual	Sample survey, annual
Irrigated areas	Administrative, annual	Administrative, annual	Administrative, annual	Sample survey, annual
Post-harvest losses	Not available	Not available	Not available	Not available
Processed crops: quantity	Not available	Not available	Not available	Sample survey, annual
Stocks of main crops: quantity	Not available	Administrative, annual	Administrative, annual	Administrative, annual
Animal production statistics				
Livestock production: quantity	Administrative, annual	Administrative, annual	Administrative, sub-annual	Sample survey, annual
Livestock Inventories	Not available	Not available	Administrative, sub-annual	Sample survey, annual
Processed meat	Not available	Not available	Not available	Sample survey, annual
Fishery and aquaculture statistics				
Fishery and aquaculture production: quantity	Not applicable	Administrative, annual	Administrative, sub-annual	Sample survey, annual
Fishery and aquaculture production: value	Not applicable	Administrative, annual	Administrative, sub-annual	Sample survey, annual
Forest production statistics				
Forest production of wood: quantity	Expert assessment, annual	Not available	Not available	Administrative, annual
Forest production of non-wood: quantity	Not available	Not available	Not available	Administrative, annual
Trade statistics				
Import and exports: quantity	Administrative, annual	Administrative, annual	Administrative, sub-annual	Administrative, annual
Import and exports: value	Administrative, annual	Administrative, annual	Administrative, sub-annual	Administrative, annual

Main sources of data and estimates	Lebanon	Morocco	Palestine	Tunisia
Crop production statistics				
Crop production: quantity	Sample survey, annual	Sample survey, Administrative, Expert assessment, annual	Sample survey, Administrative, annual	Sample survey, annual
Area planted	Sample survey, annual	Sample survey, Administrative, Expert assessment, annual	Census, 10 years, Sample survey and Administrative, annual	Sample survey, annual
Irrigated areas	Sample survey, annual	Sample survey, Administrative, Expert assessment, annual	Census, 10 years, Sample survey and Administrative, annual	Sample survey, annual
Post-harvest losses	Not available	Census, 10 years	Not available	Not available
Processed crops: quantity	Administrative, annual	Administrative, Expert assessment, annual	Not available	Administrative, annual
Stocks of main crops: quantity	Not available	Administrative, sub-annual	Not available	Administrative, sub-annual
Animal production statistics				
Livestock production: quantity	Sample survey, annual	Sample survey, 10 years	Sample survey and Administrative, annual	Administrative, annual
Livestock Inventories	Census, 10 years and Sample survey, annual	Expert assessment, annual	Census, 10 years, Sample survey and Administrative, annual	Sample survey, annual
Processed meat	Administrative, annual	Administrative, Expert assessment, annual	Not available	Administrative, sub-annual
Fishery and aquaculture statistics				
Fishery and aquaculture production: quantity	Census (on-going), Sample survey, annual (North Lebanon only)	Administrative, annual	Administrative, annual	Administrative, annual
Fishery and aquaculture production: value	Census (on-going), Sample survey, annual (North Lebanon only)	Administrative, annual	Administrative, annual	Administrative, annual
Forest production statistics				
Forest production of wood: quantity	Expert assessment, annual	Administrative, annual	Not available	Administrative, 10 years
Forest production of non-wood: quantity	Sample survey, Administrative, Expert assessment, annual	Administrative, annual	Not available	Administrative, annual
Trade statistics				
Import and exports: quantity	Administrative, monthly	Administrative, sub-annual	Not available	Administrative, annual
Import and exports: value	Administrative, monthly	Administrative, sub-annual	Administrative, annual	Administrative, annual

Main Sources of Data and Estimates (with indication of frequency)

Administrative sources	Expert assessment
Sample surveys	Combination of sources
Census	Not available

Main sources of data and estimates	Algeria	Egypt	Israel	Jordan
Agricultural inputs statistics				
Seeds quantity	Administrative, annual	Administrative, annual	Census, annual	Sample survey, annual
Quantity of water used	Not available	Administrative, annual	Administrative, annual	Sample survey, annual
Agricultural machinery	Administrative, annual	Administrative, annual	Not available	Sample survey, annual
Labour: quantity	Administrative, annual	Not available	Sample survey, sub-annual	Sample survey, annual
Fertilizer quantity	Administrative, annual	Not available	Not available	Sample survey, annual
Pesticide quantity	Administrative, annual	Not available	Census, 5 years	Sample survey, annual
Animal Feed quantity	Administrative, annual	Administrative, annual	Census, sub-annual	Sample survey, annual
Animal vaccines and drugs quantity	Administrative, annual	Administrative, annual	Administrative, annual	Sample survey, annual
Prices of agricultural products				
Producer prices of agricultural products, fisheries and forest products	Not available	Administrative, annual	Administrative, sub-annual	Sample survey, annual (crop production only)
Wholesale prices	Administrative, annual, sub-annual	Administrative, annual	Administrative, sub-annual	Sample survey, annual
Agricultural input prices	Administrative, annual	Administrative, annual	Sample survey, sub-annual	Sample survey, annual
Economic and structural data				
Public investment in agriculture	Administrative, annual	Not available	Administrative, annual	Sample survey, annual
Agricultural subsidies	Administrative, annual	Not available	Administrative, annual	Sample survey, annual
Cost of production	Expert assessment, annual	Administrative, annual	Not available	Not available
Household income	Not available	Administrative, annual	Not available	Sample survey, 5 years
Farm structures and propriety rights	Census, annual	Not available	Not available	Census, 10 years

Main sources of data and estimates	Lebanon	Morocco	Palestine	Tunisia
Agricultural inputs statistics				
Seeds quantity	Administrative, annual	Expert assessment, annual	Not available	Administrative, sub-annual
Quantity of water used	Expert assessment	Not available	Not available	Administrative, sub-annual
Agricultural machinery	Census, 10 years	Census, 10 years	Administrative, annual	Not available
Labour: quantity	Census, 10 years	Sample survey, sub-annual	Census, 10 years and 5 years	Sample survey, annual
Fertilizer quantity	Administrative, annual	Administrative, Expert assessment, annual	Not available	Administrative, sub-annual
Pesticide quantity	Administrative, annual	Expert assessment, annual	Not available	Administrative, sub-annual
Animal Feed quantity	Administrative, annual	Expert assessment, annual	Not available	Administrative, sub-annual
Animal vaccines and drugs quantity	Administrative, annual	Expert assessment, annual	Administrative, annual	Administrative, sub-annual
Prices of agricultural products				
Producer prices of agricultural products, fisheries and forest products	Sample survey, annual	Administrative, annual	Sample survey, sub-annual	Administrative, sub-annual
Wholesale prices	Sample survey, monthly	Administrative, sub-annual	Sample survey, sub-annual	Administrative, annual
Agricultural input prices	Sample survey, annual	Administrative, sub-annual	Not available	Administrative, sub-annual
Economic and structural data				
Public investment in agriculture	Administrative, annual	Administrative, annual	Not available	Administrative, sub-annual
Agricultural subsidies	Administrative, annual	Administrative, annual	Not available	Administrative, sub-annual
Cost of production	Sample survey, annual	Not available	Administrative, annual	Not available
Household income	Sample survey, 5 years	Administrative, Expert assessment, annual	Not available	Administrative, annual
Farm structures and propriety rights	Census, 10 years	Census, annual	Census 10 years, Sample survey 5 years	Sample survey, 10 years

Annex II

Main Data Sources and Frequency

High Reliable	Acceptable	Reliable	Workable	No data, not applicable or no answer
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	Algeria	Egypt	Israel	Jordan
Crop production statistics				
Crop production: quantity	Acceptable	High Reliable	Acceptable	Acceptable
Area planted	Acceptable	High Reliable	Acceptable	Acceptable
Irrigated areas	Acceptable	High Reliable	Workable	Acceptable
Post-harvest losses				
Processed crops: quantity				Acceptable
Stocks of main crops: quantity		High Reliable	Acceptable	Reliable
Animal production statistics				
Livestock production: quantity	Acceptable	High Reliable	Reliable	Acceptable
Livestock Inventories			Reliable	Acceptable
Processed meat				Acceptable
Fishery and aquaculture statistics				
Fishery and aquaculture production: quantity		High Reliable	Reliable	Acceptable
Fishery and aquaculture production: value		High Reliable	Reliable	Acceptable
Forest production statistics				
Forest production of wood: quantity	Acceptable			Reliable
Forest production of non-wood: quantity				Reliable
Trade statistics				
Import and exports: quantity	High Reliable	High Reliable	Acceptable	Reliable
Import and exports: value	High Reliable	High Reliable	Workable	Reliable
Agricultural inputs statistics				
Seeds quantity	Acceptable	High Reliable	Reliable	Acceptable
Quantity of water used		High Reliable	Reliable	Acceptable
Agricultural machinery	Acceptable	High Reliable		Acceptable
Labour: quantity	Acceptable		Acceptable	Acceptable
Fertilizer quantity	Acceptable			Acceptable
Pesticide quantity	Acceptable		Reliable	Acceptable
Animal Feed quantity	Acceptable	High Reliable	High Reliable	Acceptable
Animal vaccines and drugs quantity	Reliable	High Reliable	Acceptable	Acceptable
Prices of agricultural products				
Producer prices of agricultural products, fisheries and forest products		High Reliable	Acceptable	Acceptable
Wholesale prices	Acceptable	High Reliable	Acceptable	Acceptable
Agricultural input prices	Acceptable	High Reliable	Acceptable	Acceptable
Economic and structural data				
Public investment in agriculture	High Reliable		Reliable	Acceptable
Agricultural subsidies	High Reliable		Reliable	Acceptable
Cost of production	Reliable	High Reliable		
Household income		High Reliable		Acceptable
Farm structures and propriety rights	Reliable			Acceptable

	Lebanon	Morocco	Palestine	Tunisia
Crop production statistics				
Crop production: quantity	Reliable	Acceptable	Reliable	Reliable
Area planted	Reliable	Acceptable	Reliable	Reliable
Irrigated areas	Reliable	Acceptable	Reliable	Reliable
Post-harvest losses				
Processed crops: quantity	Acceptable			High Reliable
Stocks of main crops: quantity				
Animal production statistics				
Livestock production: quantity	Acceptable	Acceptable	Reliable	Acceptable
Livestock Inventories	Acceptable	Acceptable	Reliable	Reliable
Processed meat	Workable			Reliable
Fishery and aquaculture statistics				
Fishery and aquaculture production: quantity	Reliable	Acceptable	Reliable	Reliable
Fishery and aquaculture production: value	Reliable	Acceptable	Reliable	Reliable
Forest production statistics				
Forest production of wood: quantity	Acceptable	Acceptable		Reliable
Forest production of non-wood: quantity	Acceptable	Acceptable		Reliable
Trade statistics				
Import and exports: quantity	Reliable	Acceptable		High Reliable
Import and exports: value	Reliable	Acceptable	Acceptable	High Reliable
Agricultural inputs statistics				
Seeds quantity	Acceptable	Acceptable		Reliable
Quantity of water used	Reliable			Reliable
Agricultural machinery	Acceptable	Acceptable	Reliable	
Labour: quantity	Acceptable	Acceptable	Reliable	Reliable
Fertilizer quantity	Acceptable	Acceptable		Reliable
Pesticide quantity	Reliable	Acceptable		Reliable
Animal Feed quantity	Acceptable	Acceptable		Reliable
Animal vaccines and drugs quantity	Reliable	Acceptable	Reliable	Reliable
Prices of agricultural products				
Producer prices of agricultural products, fisheries and forest products	Reliable	Acceptable	High Reliable	Reliable
Wholesale prices	Acceptable	Acceptable	Reliable	Reliable
Agricultural input prices	Acceptable	Acceptable		Reliable
Economic and structural data				
Public investment in agriculture	Reliable	Acceptable		High Reliable
Agricultural subsidies	Reliable	Acceptable		High Reliable
Cost of production	Acceptable		Reliable	
Household income	Reliable	Acceptable		Reliable
Farm structures and propriety rights	Reliable			Acceptable



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