CONFERENCE OF EUROPEAN STATISTICIANS

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Topic (iii): Needs and responsibilities of international organisations for metadata

OECD EXPERIENCE IN THE COORDINATION BY INTERNATIONAL AGENCIES OF COLLECTION AND DISSEMINATION OF METADATA FOR INTERPRETATION AND EVALUATION OF DATA

Submitted by OECD[1]

Invited paper

I.   INTRODUCTION

1.   The primary aims of this paper are to discuss the collection and dissemination of metadata for interpretation and evaluation of data by international agencies such as the OECD,[2] the uses of metadata by those agencies, and in particular, the responsibilities and actions of international agencies in furthering the cause of co-ordinated work in metadata collection and dissemination. The paper focuses on metadata content issues and only gives oblique mention to IT and dissemination issues described elsewhere in detail, including in other papers being presented at this years' METIS.

2.   The approach I've taken in the preparation of the paper, hopefully to extend the issue further, is to describe recent and current OECD experience in the collection and dissemination of metadata. It also includes the results of discussions over the last twelve months with other international agencies that:

- highlight specific areas where co-operation is possible and things that could be implemented quickly;

- identify areas where further discussion within METIS and elsewhere between international agencies is required for enhanced co-operation.

3.   The other international agencies with whom I have had discussions in the course of my work on metadata over the last year include Eurostat, ILO, IMF, OECD, UNECE, UNSD. Hopefully, the needs and opinions expressed by these agencies are representative of other international organisations. In this regard, I would be interested to hear from other international agencies on the contents of this paper. I would also be most interested in the opinions/views of the national statistical agencies present at METIS. These agencies are, after all, the source of most of the metadata collected by international agencies that is used for the interpretation of data.

4.   The primary reason for my interest in enhancing international co-operation in the area of metadata collection is not entirely altruistic. Staff in the Statistics Directorate of the OECD have been in the metadata collection business from agencies within its Member countries for a long time. More recently, this has extended to the collection of metadata for non-Member countries within the program of

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[1] Prepared by Denis Ward.

[2] As distinct from metadata providing general information about an organisation, assisting navigation or post processing.

the Organisation's Centre for Co-operation with Non Members (CCNM).[1] The reasons for our collecting metadata are outlined below. Metadata collection is expensive in terms of staff resource usage and I would like to devote at least some of these resources to other tasks such as value added work in assessment of data quality.[2] Furthermore, the principles for enhancing co-operation in the collection of metadata could also be applied to the collection of data where I believe there is also ample scope for more effective co-operation.

II.   USERS AND USES OF METADATA

5.   Users of metadata are generally depicted as falling into two broad groups: producers of statistics responsible for designing data collections, actual data collection, processing and evaluation of data; and end-users of statistics comprising policy analysts, media, academics, students, etc.[3] The statistical functions of international organisations (further discussed below in Section III) often fall somewhere in the middle of these broad groups, in that they also perform the role of disseminators of data to internal or external end-users. In many instances the requirements of users for accompanying metadata overlap between those located in national government agencies, users in the private sector, in national statistical agencies and in international agencies. In reality, pursuing the location of users and even the types of uses of metadata may not be all that helpful in that metadata are often being presented to an unknown audience of users (or none at all??). An alternative approach would be to differentiate between the amount of metadata detail required for data interpretation by different users and how varying levels of detail is best presented. This moves onto the concept of the layered presentation of metadata further discussed in Section III below.

6.   An emerging use of metadata that has received more attention in recent years is that of assessing the "quality" of statistics.[4] I have placed the word in parenthesis because the term is often used without proper context. Again, this is an issue that has received much attention by both organisations responsible for the initial collection and compilation of statistical series and international organisations. Data quality has been described as covering a number of dimensions. There is no universally accepted definition of the term and I do not intend to spend much time inventing my own. Rather, for the purpose of this paper I will use one discussed in a Eurostat document[5] where the main elements of quality outlined are: relevance of statistical concepts; accuracy; timeliness; clarity and accessibility of statistics; comparability; coherence; completeness. The delivery of statistics that embody these elements of quality (within constraints and the various tradeoffs required) is the responsibility of national statistical agencies and international organisations alike.

7.   In reality, data quality is largely dependent on use. Only users are in a position to make a true assessment of data quality because needs vary. The approaches for measuring the quality of statistics

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[1]   Currently Bulgaria, China, Estonia, Latvia, Lithuania, Romania, Slovak Republic, Slovenia, Russian Federation, Ukraine. In the not too distant future Brazil, India and Indonesia will also be included.

[2]   An example of such value added work is the publication currently being finalised by the OECD, *Main Economic Indicators: Comparative Methodological Analysis,* which will for the first time for MEI provide extensive comparisons of key elements of methodologies countries use to compile some of the short-term economic indicators published in MEI. Comparability will be analysed in the context of existing international guidelines and recommendations published by the OECD and other international agencies such as the UNSD, IMF and the ILO.

[3]   Refer page 3 of *Report of the September 1999 Work Session on Statistical Metadata*, prepared by UNECE Secretariat for presentation at the 48th plenary session of the Conference of European Statisticians, Paris 13-15 June 2000 (CES/2000/20).

[4]   In particular, both Eurostat and the IMF have been active in this area in recent years. The IMF's Data Quality Reference Site (DQRS) provides a comprehensive list of references on the use of metadata to assess data quality, quality concept issues and the experiences of a number of individual countries in the assessment of data quality. (http: dsbb.imf.org/dqrs_intro.htm)

[5]   *Assessment of Quality in Statistics*, Eurostat, 4-5 April 2000.

also vary considerably. However, the common element to all approaches is that to some extent they each require access to appropriate metadata.

III.   NEEDS OF INTERNATIONAL ORGANISATIONS FOR METADATA FOR DATA INTERPRETATION

8.   The functions of international organisations such as the OECD in relation to statistics are varied, but may be summarised as:

- collection and dissemination of statistics for use by users internal to the organisation or for publication/dissemination to users external to the organisation;

- assessing the quality of those statistics, specifically the element of comparability;

- co-ordination and building statistical capacity for countries/areas;

- working in partnership with each other and with national statistical agencies to develop international statistical guidelines and recommendations; and

- promulgation of best statistical practice within the context of those standards.

9.   The needs of international agencies for metadata also vary and to some extent depend on what the agency sees as its primary mission, be it along the lines of the OECD whose main role is the formulation of policy recommendations to Member governments, or Eurostat whose mission is "to provide the European Union with a high-quality statistical information system" within the framework of harmonisation and the production of statistical guidelines and recommendations. The missions of the other international agencies have elements in common with both these organisations.

10.   The common element for all international agencies in the statistics they collect and disseminate is the desire to lend transparency to the data so that the "ideal" end-user can make an informed assessment of their usefulness and relevance in relation to the use to which the data are being used. The notion of the end-user referring to metadata to gain a complete understanding of the data is somewhat idealistic and I suspect seldom occurs.[1] In this context I favour the approach described by Eurostat[2] in that metadata presented to users is best presented in layers within a pyramid.

11.   In the model presented in the following diagram for a specific statistical series (e.g. CPI, PPI, industrial production index, unemployment rate, etc.) the metadata describing the data becomes more detailed as one moves downwards from the apex of the pyramid. This is essentially the model the OECD is currently implementing in the presentation of metadata for short-term indicators published in the monthly publication, *Main Economic Indicators* (MEI). A brief description of each layer for MEI is provided below:

- Table headings and footnotes – Are an integral part of each statistical table published in MEI. Table headings should be clear and brief. Footnotes should be kept to a minimum and restricted to those essential for an understanding of the data. In most instances, this is the only metadata referred to by users.

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[1]   This really begs the question of why do statisticians feel so strongly about the need for metadata. In essence, the primary users of very detailed methodological information are most likely other statisticians.

[2]   In the paper, *The Metadata Problem in a European Context*, written by Steven Vale and Marco Pellegrino for the for the Eurostat Workshop on Statistical Metadata, Luxembourg, 14-15 February 2000.

- Explanatory notes – Are provided at the back of the MEI paper publication. Provide a brief general description of the indicator and an outline of key issues that can impact on use of the data. In the main, the explanatory notes in MEI do not provide much detail on individual country methodology.

- Sources and definitions – Provide a <u>brief</u> outline of current national practices for each country summarised under five broad headings (definition, coverage, collection, calculation and adjustment). Sources and definitions metadata are published in a paper publication, on the OECD website and on CD-ROM where it is updated monthly. Sources used for updating the metadata are national publications and national statistical agency websites, other international agencies and as a last resort, directly from national data providers.[1]

- Sources and methods – Contains more detailed methodological information on individual country practices collected and disseminated on the basis of a detailed metadata model or template, or extensive series of metadata prompt points. Sources and methods metadata have been published by the OECD, IMF, ILO and Eurostat.[2] The issue of the absence of a universally accepted metadata template is discussed further below in Section D.

- Metadata disseminated by NSO's in publications and/or on websites. Is potentially the source of the most detailed methodological information. Some (though not all OECD member countries) publish very detailed concepts, sources and methods for a number of their key economic indicators, many of which are located on their websites. National practices do however vary considerably with regards frequency of updating of these publications.[3]

12. The same layers hold for other OECD Statistics Directorate publications, though the process of updating is less systematic and collection frequently (especially for annual and quarterly publications) entails use of a questionnaire despatched to national agencies.

13. The metadata in the top three layers are generally disseminated by the international agencies publishing the data. The more detailed metadata in the fourth level (sources and methods) are also often disseminated by international agencies (e.g. in the IMF's detailed methodological descriptions posted on the DSBB, by the OECD in various sources and methods publications). The most detailed metadata is occasionally produced by the national agency responsible for the initial collection and processing of the data. As mentioned above, national agencies are the ultimate source of almost all metadata disseminated by international agencies for interpreting data.

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[1] The latest paper edition of the OECD publication, *Main Economic Indicators: Sources and Definitions*, was released in June 2000.

[2] Examples of such publications are the various sources and methods publications produced by the OECD for CPI, PPI, construction price indices, labour and wage statistics, domestic finance statistics. These are located on the OECD website at http://www.oecd.org/std/meta.htm. The IMF has provided detailed metadata summaries on its Dissemination Standards Bulletin Board (DSBB) website at http://dsbb.inf.org. Some examples of detailed metadata published by the ILO includes the Statistical Sources and Methods series published for CPI; employment, wages and hours of work (establishment surveys); economically active population, employment, unemployment and hours of work (household surveys). Finally, Eurostat has also published an extensive range of detailed metadata publications for industry statistics, services statistics, household labour force surveys.

[3] Examples of such publications include: concepts, sources and methods publications produced by the Australian Bureau of Statistics for CPI's, balance of payments, PPI's; metadata publications produced by Statistics Canada for CPI's, labour force surveys; Statistics New Zealand for PPI, CPI, balance of payments, quarterly national accounts; US Bureau of Labour Statistics in its *Handbook of Methods* for PPI, CPI, household labour force surveys, and compensation surveys. This list is by no means exhaustive.

Metadata dissemination model
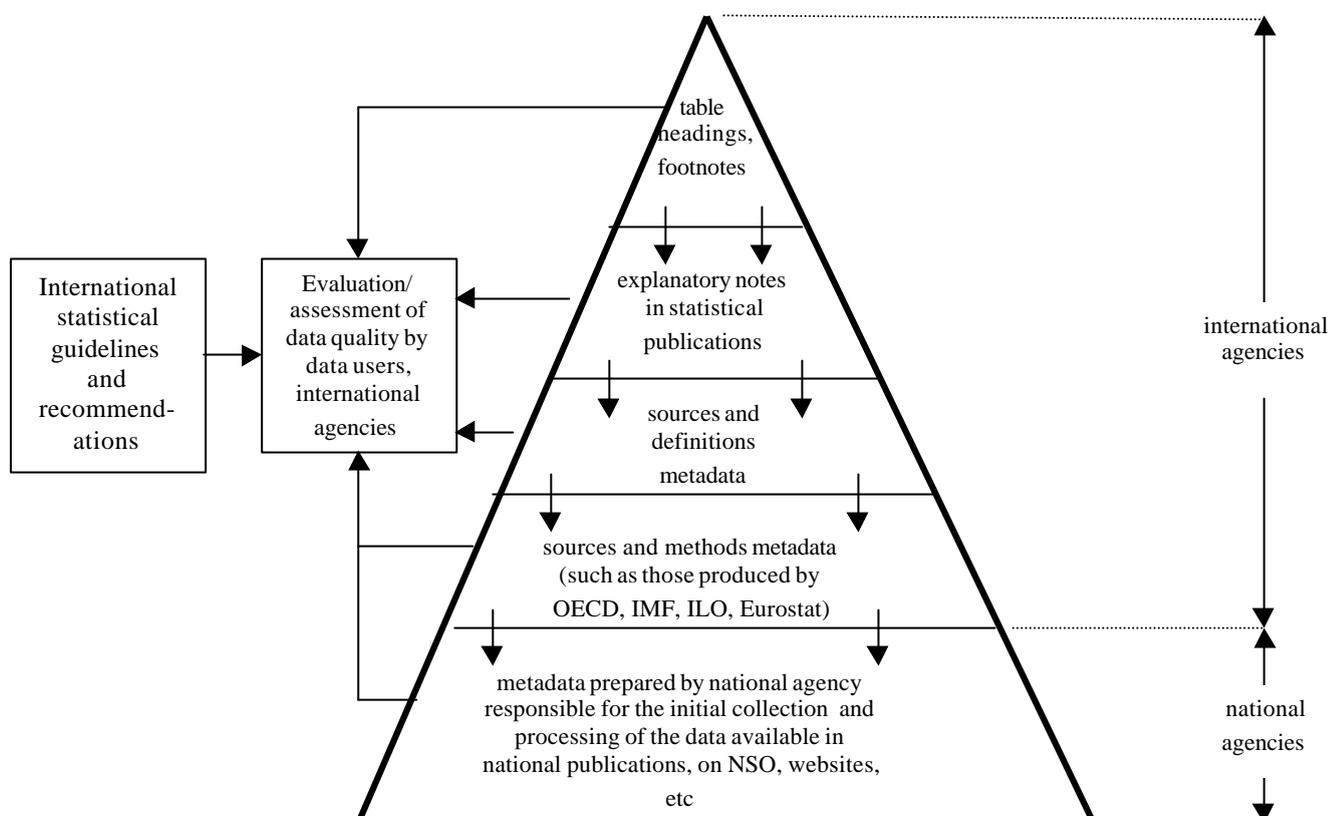
14.   Most users of metadata disseminated by international agencies in the context of the dissemination model outlined above, merely access the top layer, though if they require more detailed information on specific methodological aspects (not available in the top layers) to determine the relevance of the data to their use they drill down through succeeding layers where more detailed methodological information are provided. They may ultimately need to refer to metadata disseminated by national agencies.

15.   The "passive" roles of the statistician in relation to metadata primarily entail its collection, verification and dissemination. To these I would add the tasks of giving it structure so as not to drown the user in enormous amounts of text and providing a clear path that enables users to dig deeper if required. These are functions that have traditionally entailed extensive use of resources by both international and national agencies. As mentioned above, one of the objectives of the current redesign of the MEI is to build in clear paths through the systematic use of appropriate cross references in the paper publication and hyperlinks, etc. to the various layers of methodological information to enable users to readily access the layer that suits their needs. This design concept will be carried through to the structure of both the MEI CD-ROM and on-line internet products later this year.

16.   In the past, collection and dissemination have in the main been the primary objectives of the OECD in the area of metadata. However, as mentioned in Section II above, there is also an "active" use for metadata by statisticians in international agencies (and elsewhere), that is, its use in the evaluation and assessment of data quality and comparability. This is the primary function of the MEI methodological analysis publication described above. To a large extent, the actual collection of metadata is but a way station on its use in evaluating some aspects of data quality, especially the element of comparability. The

aim of such evaluation in the OECD is to meet persistent internal user questions on the quality of the data. The solution is not merely the provision by statisticians of more unstructured metadata, which users probably won't take the time to read. Further elaboration on the value added that can be given by statisticians to raw metadata and the different methods for undertaking such evaluation is probably the topic of another paper.[1]

17.   As mentioned above, the collection of metadata by the OECD is undertaken using a variety of sources. For MEI a combination of sources are used and only as a last resort is there direct contact with national agencies, most commonly to verify some specific aspect of methodology. For the more detailed MEI sources and methods and recently for the quarterly *Indicators of Industrial Activity* use is made of questionnaires. The OECD is now looking at ways of streamlining the process of collecting and maintaining metadata through more effective co-ordination with other international agencies. Some of the elements of more effective co-ordination are discussed below in Section IV. The following Section also incorporates the results of bilateral discussions with a number of other international agencies.

IV.   RESPONSIBILITIES OF INTERNATIONAL ORGANISATIONS

18.   The responsibilities of international agencies regarding metadata (and probably to data as well) drawn from the experience of the OECD and which are usually expressed in papers such as this are to:

• minimise the reporting burden of organisations supplying both metadata and statistics;

• ensure that statistics disseminated are accompanied by appropriate metadata;

• provide efficient facilities for the dissemination of appropriate metadata detail to users.

19.   These are very general objectives to which very few would take exception. The difficult task is to translate these objectives into action. In this sense international organisations have a clear responsibility to undertake specific activities/actions that will bring about improved co-ordination in the area of metadata. The main elements of such co-ordination where there is scope for further improvement are outlined below:[2]

• International agencies giving an indication at the project inception stage of their intention to collect metadata from national source agencies, so that the needs of other international agencies could be considered for inclusion. This would enable the one metadata "contact" to address the needs of a number of international agencies. There are existing mechanisms for this such as the Integrated Presentation. This is not perfect as all projects/intentions are not currently listed. At the moment the international agencies reporting current and future statistical activities in the Integrated Presentation include: CIS, ECB, Eurostat, ILO, IMF, OECD, UNECE, UNIDO, UNSD, World Bank, World Tourism Organisation.

An extension of this would be for international agencies to reach agreement on the collection of metadata from national agencies on behalf of each other. There already exist a number of co-

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[1]   It is not difficult to argue that much of the metadata collected and disseminated by agencies such as the OECD is not really of much use in making a proper evaluation of data quality. In many instances insufficient attention is given to aspects of methodology that have a crucial impact on data quality. An example would be bias resulting from deficient coverage practices, poor questionnaire design, etc. Even this is a moveable feast as some cases of large known bias <u>may</u> have very little significance for a specific user. Resource constraints will force statisticians to pay even more attention to the content of the metadata to ensure that "key" methodological items that have greatest impact on data quality are adequately described in the metadata.

[2]   Some of these elements are also discussed in the *Report of the September 1999 Work Session on Statistical Metadata*, prepared by UNECE Secretariat for presentation at the 48th plenary session of the Conference of European Statisticians, Paris 13-15 June 2000 (CES/2000/20).

ordination agreements between international agencies involving the collection of data, e.g. OECD-UNIDO, OECD-IEA, OECD-Eurostat, so extending this to metadata should not be difficult. Amongst other things, this would entail agreement between international agencies on the timing of metadata collection.

- Harmonising of requests for metadata by international organisations through use of a common metadata template.[1] Harmonisation of templates could also simplify comparison of national methodological practices and facilitate electronic search. There are a finite number of methodological aspects/items that describe a statistical series, from design of the collection frame, actual collection, processing, manipulation, presentation, etc. Unfortunately, the combination and permutations of such methodological elements have yielded an almost infinite number of metadata templates by international organisations and national agencies.

20.   In addition to a perceived lack of co-ordination between international agencies, national agencies faced with the burden of providing metadata to different international agencies, often comment on the use of different metadata templates. They also comment on how much easier life would be if different international agencies used the same model (or at least a common core template) so that one set of metadata compiled by the national agency would meet the needs of many/all/most international agencies. Looking at the metadata models used by different international agencies (including the OECD) there is an obvious element of truth in this statement.

21.   Options for improvement in this area would either entail the international agencies agreeing on the use an existing template or developing a new one. The latter could take some time. My personal preference would be not to become involved in a lengthy process of developing a new template and instead use an existing template(s) such as those developed by the IMF for the detailed methodological summaries posted on the DSBB. Metadata provided on such a basis would meet almost all OECD metadata requirements. International (or national) agencies requiring a more detailed template could consider developing models that are at least consistent with the IMF template or other generally accepted standards in this area. Whatever template international agencies agree to use, subsequent evolution/modification would inevitably necessitate a process of consultation through forums such as METIS. Furthermore, templates would need to be developed for series not currently included in the SDDS.[2]

22.   Another option would be for international organisations to at least reach agreement on four or five "essential" very broad metadata headings, such as those outlined in the third layer (sources and definitions) of the pyramid model described above. These are not dissimilar to the broad headings used in the IMF's summary methodology statements on the DSBB.[3]

- Sharing metadata that has been collected. This means adhering to the principle of free and open access to metadata the international agency collects. Free and open generally means making the metadata readily available on the internet. The principle of free and open access to metadata via the internet should also be applied by national agencies.

23.   The OECD sees metadata as having a substantial "public good" component and is in its interests to have methodological information compiled by the Organisation made available free of charge on the

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[1]   The notion of a metadata template is sometimes referred to as a metadata content model, metadata model, metadata prompt points.

[2]   The IMF has developed templates for: QNA; CPI; PPI/WPI; industrial production index; employment; unemployment; wages; foreign trade; BoP; international reserves; central government debt summary; central government operations summary; general government operations summary; analytical accounts of central bank; analytical accounts of banking sector; population, fertility and mortality statistics.

[3]   Analytical framework, concepts, definitions and classifications; Scope of the data; Accounting conventions; Nature of the basic data; Compilation practices; Other aspects.

internet, etc. Along these lines most international (and many national) agencies already post their metadata on websites, though it is occasionally difficult to locate as website design varies enormously. It would be highly desirable if the notion of ready (free) access to metadata could be built into one of the fundamental practices of national and international statistical agencies.

24.   The other issue related to the sharing of metadata between agencies is that of attribution. All agencies allow others to access and use the metadata they compile and disseminate, a process often involving extensive use of resources. It would be useful for each of the international agencies to specifically outline any caveats and qualifications on the use of their metadata by other agencies, particularly for republication. Setting too many conditions on use by other agencies will inevitably result in those agencies collecting their own, sometimes from national agencies. I must admit that the OECD does not appear to have an "official" policy in this regard. However, the general consensus within the Organisation is that metadata, notwithstanding the resources entailed in its collection, etc, is a public good commodity and as such should be available for use by other agencies, even for republication. The only condition it would specify would be on the need for appropriate global attribution.

25.   Finally, it would also be desirable if future requests for metadata by an individual international agency were accompanied by a blanket statement to the effect that the metadata will be shared with other international agencies unless the national agency indicates otherwise. The remaining issue that needs to be determined is whether or not the responses to the original questionnaire is to be shared or only the published versions.

- Adopting common terminology to describe the same statistical phenomenon. Methodological text provided by national agencies frequently uses either different terminology for the same phenomenon or the same terminology for different phenomenon. Often, considerable resources are expended by international agencies in verifying text, etc, to ensure that methodological descriptions are consistent as possible between countries. Metadata for most of the short-term economic indicators published in MEI is also disseminated by other international agencies. Not only does the process of metadata verification entail a duplication of effort but it also results in dissemination of different methodological terminology, especially where translation of methodological text into another language is necessary.

26.   Recent work on the soon to be published OECD publication, *Main Economic Indicators: Methodological Analysis*, highlighted these problems when an attempt was made to compare methodologies by different countries for a number of key short-term economic indicators using metadata compiled previously by the Organisation.

27.   Ideally, methodological descriptions of the same national statistical collections published by different international agencies should be identical with regards terminology.[1] A mechanism for achieving this would be rigorous use of terminology imbedded in the various international statistical guidelines and recommendations. This could be facilitated by the use of glossaries published by international agencies. An example is the recently published OECD publication *System of National Accounts, 1993: Glossary*.[2] Another useful tool is the *Monthly Bulletin of Statistics* (MBS) data dictionary recently posted by UNSD on their website (http://esa.un.org/unsd/cdbmeta/default.asp). Although this data dictionary is primarily intended to describe the series published in UNSD's *Monthly Bulletin of Statistics* it does provide internationally recognised definitions of a large number of terms with citations to the original sources. The definitions used in the MBS are in the notes to each specific series.

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[1]   Resolving problems relating to terminology is complicated by the fact that the metadata are often provided to the international organisation by the national agency in their national language or in languages other than their national language. There is also the problem that international organisations often need to publish metadata in several languages. Achieving comparability and consistency in this environment is not easy.

[2]   Published earlier this year and received extensive input from UNSD, IMF, World Bank, Eurostat.

As would be expected these sometimes differ to those in the MBS data dictionary. Finally, Eurostat also has a comprehensive glossary on their website.[1] There are no doubt others.

28.   Such glossaries/data dictionaries are an invaluable resource for other agencies. Unfortunately, their location is somewhat fragmented and the definitions provided are not always consistent. It would be very useful if international agencies could co-ordinate their activities further and develop a common reference site or at least provide better links to other similar sources. Where differences in terminology are necessary because of some regional context, an explanation of the reason for differences could be provided. Finally, use of a common metadata template would also help.

- Development of a process for co-ordinated updating of metadata by international agencies. One of the problems faced by international agencies in updating their metadata is not the absence of metadata (at least for some series), but the fact that existing metadata available from different sources is often inconsistent. For example, staff at the OECD were recently updating metadata for CPI's for a Member country. There were a number of sources, e.g. the IMF DSBB, metadata on the OECD MEI SQL server, the Member country website and in the Member country paper publication – all of which were different for some methodological elements. This is an extreme example, but it does illustrate the need to at least date stamp revisions to metadata.

29.   It is probably beyond the capacity of any one international organisation to gather, let alone maintain, all of the metadata required to meet (often unspecified/non-specific) user needs. The solution adopted by the OECD for MEI entails:

   - use of the layered approach outlined above and to by and large restrict future metadata collection to summary sources and definitions metadata;

   - where more detailed metadata are required (e.g. for sources and methods publications), to either work collaboratively with other international agencies or to hyperlink with existing detailed metadata, e.g. the IMF summary methodologies posted on the DSBB or the very detailed metadata provided by some national statistical agencies on their websites.

- Provision of a comprehensive list of existing international statistical recommendations and guidelines. Over the years, international and national agencies have developed standards for many types of economic and social statistics. The availability of an international standard provides a useful context for discussion of the dimensions of data quality outlined above, in particular, comparability. Such standards are an essential ingredient in the specification of data requirements (e.g. coverage, classifications, etc) for individual statistical series required by international agencies. The OECD MEI includes a wide variety of short-term indicators. These indicators in turn are the subject of a similarly large number of international statistical standards.

30.   As mentioned above, the publication *Main Economic Indicators: Methodological Analysis* currently being prepared attempts to compare key elements of methodology for the most important indicators in the context of international standards. A list of international statistical guidelines and recommendations maintained by an international organisation such as UNSD would be a very useful reference in this regard. Such a list would be useful in its own right as it would provide substance to what commentators generally refer to as "international standards". It would also be useful in identifying where standards are non-existent or out of date and provide a useful reference for those wishing to know whether existing standards currently are being modified. In fact, UNSD is currently preparing a list of methodological publications in statistics which includes many of the elements described here. The site will host a database of information on current or planned work by international organisations, as well as details and annotations on previously adopted statistical standards and published methodological work. It would be very useful if UNSD could maintain the list.

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[1]   Reference: http://forum.europa.eu.int/Public/irc/dsis/bmethods/info/data/new/main_en.htm

- Promulgation of guidelines of best practice for statistical website design, particularly with respect to the presentation of metadata required for the interpretation of data. The implementation of a minimum set of standards by national statistical institutes and central banks for data and metadata located on the web would facilitate its use by international agencies as a means of data transfer. A review of the homepages of national statistical offices of ECE member countries described in a paper presented at last years METIS meeting[1] indicated that the presentation of metadata on most sites was restricted to hyperlinks to methodological information posted on the SDDS. A quick review of OECD Member country NSO and central bank websites undertaken more recently by me has shown that there is still considerable variation in the amount of metadata (and data) on websites. Most countries provide at least some metadata for their main short-term indicator series. A smaller number also provide very detailed metadata for key series such as CPI, balance of payments, quarterly national accounts, labour force unemployment.

31.   Of greater concern than variation in the amount of metadata are the considerable differences in national practice in the actual presentation of data and metadata on those websites. Areas of concern with respect to website design practices in some countries include: navigation difficulties; speed (perhaps due in some cases to over-elaboration of graphs, picture files, etc); delays in the insertion of the latest data releases; difficulties in the electronic transfer of data/metadata.

32.   These and other issues relating to website design were outlined in the paper, *Guidelines for Statistical Metadata on the Internet*, prepared by Statistics Norway with the assistance of other international agencies which was presented at METIS in 1998.[2] This paper proposed a number of guidelines for statistical metadata on the internet. National experiences in the implementation of the Guidelines was discussed at METIS in September 1999 with the conclusion that no revision to the existing version is needed. A general observation was the considerable variation in the degree of conformity by countries with the general design principles outlined in the paper. Discussion at METIS last year pointed to the need for more specific guidelines for best practice of statistical website design such as those prepared by Lars Rauch to be discussed at this years' METIS.

V.   AREAS FOR FUTURE WORK

33.   This paper has highlighted seven areas where coordinated activity between international organisations, working in co-operation with national agencies, would contribute to making the statistics we all publish more transparent, facilitate assessment of data quality, and save us all time and effort. In summary, the areas of co-operation are:

   i.   international agencies giving sufficient notice of their intention to collect metadata from national source agencies;

   ii.   harmonising of requests for metadata by international organisations through use of a common metadata template;

   iii.   sharing of metadata that has been collected by international agencies;

   iv.   adopting common statistical terminology;

   v.   development of a process for co-ordinated updating of metadata by international agencies;

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[1]   *Overview of the Homepages of National Statistical Offices of ECE Member Countries*, prepared by ECE Secretariat, METIS, September 1999, Working Paper No. 22.

[2]   The paper was presented at the 46th plenary session of the Conference of European Statisticians, Paris 18-20 May 1998 (CES/1998/32).

vi.   development of a framework of international statistical recommendations and guidelines;

vii.   promulgation of guidelines and best practice for statistical website design.

34.   However, improved cooperation in these areas won't necessarily happen automatically. In this regard I see METIS playing a key role in facilitating and providing a catalyst for change. Some areas (for example (i)) only require the use of existing mechanisms and the desire on the part of international agencies to use those mechanisms effectively.

35.   The sharing of metadata that has already been collected/compiled (area iii) essentially only (perhaps naively on my part) requires international agencies and national agencies to give a clear indication of any limitations they wish to impose on the use/publication of "their" metadata by other agencies.

36.   The UNSD data dictionary, the Eurostat glossary and the OECD's SNA glossary together already provide a comprehensive terminology data base (area iv). It would be very useful to discuss options for bringing these together at the one site which could serve as a common reference for all international agencies. The OECD would certainly be interested in providing future input to such a site.

37.   Again, current UNSD work in the preparation of a list of methodological publications would provide a sound basis for the development of a framework of international statistical recommendations and guidelines (area vi), and it is hoped that all international organisations would provide the necessary input to make such a list as comprehensive as possible. Possibilities for the future include the provision of links to the actual framework document.

38.   METIS is already working on the promulgation of best practice for website design (area vii) and the paper to be presented by Lars Rauch this year will cover this, even though the specific issue of metadata will be covered from a general point of view. Perhaps, the issue of presentation of metadata on websites could be fleshed out further in future editions.

39.   With regards to the remaining two areas listed above (metadata templates (area ii) and co-ordinated metadata updating (area v) I would be interested in pursuing discussion during this years' METIS, either during formal session or informally, with a view to formulating a programme of specific activities for achieving concrete progress during the coming year.