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Population projections

Results of the consultation on the recommendations on communicating population projections

Addendum

Note by the Secretariat

Summary

The note summarizes the comments by members of the Conference of European Statisticians (CES) on the *Recommendations on communicating population projections* (ECE/CES/2015/7). The Secretariat carried out the electronic consultation in March 2017.

A total of 48 countries and international organizations replied to the consultation. The responding countries and organizations supported the endorsement of the recommendations.

Respondents also provided comments on the Recommendations. This note presents the substantive comments received, together with the replies of the UNECE Task Force on Population Projections, including suggestions for amendments to the Recommendations to address the comments.

In view of the support received, the 2017 Conference of European Statisticians plenary session will be invited to endorse the *Recommendations on communicating population projections*, subject to the amendments presented in this note.

## I.	Introduction

1.	This note summarizes comments made by members of the Conference of European Statisticians (CES) on the *Recommendations on communicating population projections*. The Secretariat carried out an electronic consultation on the recommendations in March 2017.

2.	The Bureau of the Conference of European Statisticians (CES) reviewed the draft Recommendations in February 2017 and requested the Secretariat to send the document to all CES members for electronic consultation.

3.	The following 48 countries and international organizations replied to the consultation: Albania, Armenia, Australia, Austria, Belarus, Belgium, Bosnia and Herzegovina, Brazil, Canada, Colombia, Croatia, Cyprus, Czechia, Denmark, Finland, France, Georgia, Germany, Greece, Hungary, Israel, Italy, Japan, Latvia, Lithuania, Malta, Mexico, Mongolia, Montenegro, Norway, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, The former Yugoslav Republic of Macedonia, Turkey, Ukraine, United Kingdom, United States, Eurasian Economic Commission, Eurostat and Organisation for Economic Co-operation and Development (OECD).

4.	Some countries that were represented in the Task Force on Population Projections which drafted the Recommendations did not provide comments but supported the Recommendations to be submitted to the CES plenary session. Georgia and Malta provided no comments, specifying that the national statistical offices (NSOs) do not produce population projections.

## II.	General comments

5.	All responding countries and organizations considered the Recommendations ready for approval by CES, subject to the amendments resulting from the comments provided in the consultation.

6.	All responding countries and organizations also indicated that the Recommendations provide useful guidance on communicating population projections, and agreed with the conclusions.

7.	Many countries acknowledged the value of the Recommendations. General remarks of appreciation for the importance and usefulness of the Recommendations were made by several countries including: Armenia, Australia, Croatia, Germany, Greece, Japan, Latvia, Lithuania, Mexico, Mongolia, Norway, Romania and United States. Countries made the following general remarks:

	(a)	Australia noted that "A comprehensive list of good practices and recommendations on effectively communicating population projections is provided in one single document here. The Australian Bureau of Statistics (ABS) is of the view that the recommendations will be useful for projection-users worldwide";

	(b)	Croatia specified: "Due to the fact that this document compares and contrasts all three viewpoints, from users, experts and NSOs, it comprises an extra added value and should be observed as a useful stock of information for all NSOs involved in the production of population projections";

	(c)	Japan underlined that the document is very useful, and that it could help users understand population projections, including the limitations of probabilistic projections;

(d)   Mexico noted: "It is a well-structured document, which presents fundamental concepts and focuses attention on current concerns in a balanced way";

(e)   Norway stated "The whole document, including the Introduction, is very well written, with a good structure, useful examples and a clear language – in itself a good example of communicating!";

(f)   The United Kingdom wrote: "This is a well written comprehensive guide on disseminating projections with many very useful examples.";

(g)   The United States commented: "Very good, concise report. Could expand to nearly any data topic. User-centric framework and the guidelines particularly in 1.2, 4.1, 4.2 4.5 are very helpful and key to highlight for successful dissemination."

III.   Specific comments on various chapters of the Recommendations

8.   Several countries also provided specific comments on various sections and chapters of the Recommendations. The substantive comments are presented in this section, together with the responses by the Task Force on Population Projections. The following text also includes changes proposed by the Task Force to the Recommendations to address the comments received.

A.   Introduction, research framework and methodology

9.   Latvia suggested that a glossary of the main terms and definitions regarding population projections could be very useful.

10.   Norway noted that the only main drawback of the work is the quality of the user survey, where the 151 respondents probably are not a random sample of all users, and equally important: we do not know whose projections they use and respond on. Norway suggested that perhaps the introduction (which already discusses the limitations) could be expanded on this drawback. Norway also suggested dropping the decimals in the figures showing results from this survey (figure 2 and 3).

11.   Hungary noted that the document would greatly benefit from a short list or table containing all the single recommendations, or from a summary in a suitable form.

1.   Response by the Task Force

12.   The idea of a glossary for terms used in population projections had been considered by the Task Force. The decision was made to not include a glossary, for several reasons. One reason is that good and exhaustive glossaries for demography can be found easily, the most patent example being Demoepedia. In general, the use of terminology was not identified as an issue by users' or projection-makers', except for few terms for which there are persistent ambiguities in usage. For these terms, the document contains an elaborated discussion in a dedicated section 'Terminology'. The definitions adopted should help NSOs looking for an authoritative definition for these terms.

13.   The Task Force agrees with the comments from Norway. The main drawback of the user survey is the risk that its sample is not representative of all users. In fact, it most likely is not. It is difficult to identify the biases without another more representative survey, but the user survey provides good indications of a bias towards more experienced users, which are not unexpected given the sampling methodology used. To compensate for this likely bias, but also in recognition of the fact that most users of population projections are not

demographers, the Task Force had given careful consideration to the necessity of communicating results and methods effectively to a lay audience. This is reflected in several good practices proposed, such as introducing the information in a progressive manner, using a clear and simple language, providing a glossary of the key terms used or offering clearly-identifiable means for users to ask questions (respectively Good Practices 1.1, 1.2, 2.3 and 4.1).

2. Changes proposed by the Task Force

14.   The Task Force suggests to state more clearly (in the methodology section) the approach used to compensate for the bias towards more experienced users.

15.   In response to comments made by Hungary, the Task Force suggests adding a list of all the recommendations and good practices contained in the document.

B.   Chapter 1 - Provide pertinent and accessible results

16.   Belgium noted, with regard to Good Practice 1.3 and the high uncertainty of very long term projections, that also high uncertainty in the very short term should not be neglected (as concerns net migration). High immigration flows (for instance the important asylum seekers flows into Germany in 2015) may result in going beyond the prediction intervals.

17.   Japan suggested reconsidering Good Practice 1.3, which recommends providing both short-term and long-term projections. Priority should be given to long-term projections since population phenomena should be considered in long horizons. The following comments were made: "Providing short-term projection may give users a misunderstanding of the future population trends, and also confusion if it differs from long-term ones. Moreover, it would be misleading if the users felt that the short-term projection is more accurate that the long-term one. It is not always true that both two projections should be provided."

18.   Japan also warned about Good Practice 1.7 and the risk that users misuse customizable/interactive projection tools, either because they do not have accurate knowledge of demography and set implausible assumptions (leading to questionable results), or because they intentionally make population projections to fit personal purposes, attributing responsibility to the projection-makers. Providing such tools should be carefully considered not only for the cost of development but also for the risk of misuse.

19.   Colombia wished that some recommendations were provided about the implementation of Good Practice 1.3 in the short-term.

20.   Colombia also suggested adding the following reference to Box 1: "DANE Colombia - The population projections website of the Departamento Administrtivo Nacional de Estadística offers an interactive visualization that includes a minute-to-minute population update, population per specific date and year population comparison. User can filter data by the region or state to compare between different years and select age-specific participation. REFERENCE: Departamento Administrativo Nacional de Estadística - DANE- (2016)"

21.   Denmark mentioned that data in Figure 2 would be more useful if it was possible to know at which frequency the projections used were updated.

1. Response by the Task Force

22.   The comments from Belgium and Japan highlight an issue with how short-term projections are presented. The Task Force suggests expanding the content to include a more

thorough discussion about the dynamics of short- vs. long-term projections. The high uncertainty of short-term projections could then be recognized more carefully. The Task Force also suggests expanding the discussion about how alternative scenarios or prediction intervals reasonably convey the uncertainty in the short-term. In general, NSOs should be aware of limitations of short-term projections and inform users about them.

23.   With regard to the suggestion by Colombia about Good Practice 1.3, the Task Force notes that the focus of the document is not about the methods, but about the communication of population projections. The document offers some guidance by identifying the key factors that are critical for the quality of population projections in the short-term. The Task Force nevertheless suggests to better document the difficulties inherent to producing short-term projection (in response to the comments provided by Belgium and Japan), and to recommend that projection-makers inform users about these limitations.

2.   Changes proposed by the Task Force

24.   The Task Force suggests to modify the content under Good Practice 1.7. to acknowledge the concerns of NSOs with the an interactive tools allowing users to make their own custom projections. The Task Force suggests to describe more clearly the risks and state that this is not identified as a recommended good practice.

25.   The Task Force will add the example of customizable projection results provided by Colombia.

26.   The Task Force agrees with comments from Denmark. Comparisons were not included simply because the user survey did not ask for the update frequency of the projections used. However, a careful comparison could be added by making the assumption that the respondents to the user survey used the most recent projections produced by the statistical agency of their country, for which it is possible to know the frequency at which they are updated. The Task Force suggests adding this comparison.

C.   Chapter 2 - Cultivate transparency

27.   Australia informed that the ABS releases a 'Fact Sheet' along with projections results on its website, providing a simple description of what projections mean, what they are used for, what the difference is between a projection and a forecast, what method is used, what assumptions are used and how they are determined etc. Users find the 'Fact Sheet' very useful. Other NSOs and projection-makers may consider releasing a similar 'Fact Sheet', if they are not already doing so.

28.   Belgium, with reference to the first sentence of Good Practice 2.2, wonder whether a population projection can be considered as a "statistic", and suggested rephrasing this sentence, avoiding considering a projection as a statistic. Belgium noted also that uncertainties around population projections are not identical to uncertainties around statistics.

1.   Response by the Task Force

29.   The Task Force agrees with Belgium that differences can be established between projections and statistics as generally understood. However, the reference to statistics in the text is only made to highlight a specific commonality in terms of purpose, about which clear recommendations can be found in a key document (United Nations' Fundamental Principles of Official Statistics). In this document, the term 'statistics' is used in a general way, as information provided by statistical organizations. Therefore, the Task Force recommends not modifying the content of the report on the basis of this suggestion.

2. Changes proposed by the Task Force:

30. The Task Force suggests integrating the example of the 'Fact sheet' prepared by the Australian Bureau of Statistics as a proactive example of measure aiming to respond to users frequently asked question (in chapter 4, Good Practice 4.1).

D. Chapter 3 - Address uncertainty explicitly

31. Germany noted that the chapter presents (on page 27) the advantages and disadvantages of deterministic projections, while those of probabilistic projections are presented in the appendix. Germany suggested treating both approaches in the same way in order to avoid a biased perception of the two approaches by the reader. Advantages and disadvantages of probabilistic projections should be included in the main text.

32. Germany also commented that the Recommendations with regard to probabilistic projections sound a little bit vague. On page 37 the text includes a reference to "methods that are at least partially standardized", without specifying who should agree on a standard method. Germany suggested including the sentence "Up to now there is no consensus on standard methods to express measures of uncertainty within population projections", as countries may wait with applying probabilistic projections at least until standard methods are derived.

33. Belgium commented on the sentence "such [probabilistic] projections have been built using time-series extrapolations, expert elicitation, analysis of past forecast errors, or a combination of these methods", and noted the following: "The choice of the length of the time-series, the choice of the experts, etc. are also based on assumptions (a "choice" of the modeler) which influence the probability distribution. Uncertainties around the distribution are rarely discussed…. The resulting mean and deviations from the means appear often to be "without uncertainties". It is not the case."

34. Poland does not fully agree with recommendation to use conditional language (Good Practice 3.5). In Poland forecast projection are normally written in "certain" terms (e.g. there will be the decrease after 2030 etc.) as it is considered that this makes the language of the publication simpler than writing all the time "according to our prediction after 2030 there will be…". Poland considers that this recommendation goes against point 1.1 stating that communicating in simple terms is very important, and believes that other measures of communicating uncertainty mentioned in the chapter are sufficient.

35. Japan argued that uncertainty analysis and probabilistic projections, as recommended in Good Practice 3.7, is problematic. According to Japan, ordinary users may not understand accurately the concept of uncertainty, and may consider the prediction intervals without considering the assumptions.

36. With reference to the scenario approach (Good Practice 3.9) Belgium shared his experience with this approach and some concerns: some users may ask the NSO which scenario should be used, or may choose the one more "convenient" for their purposes. This approach could make decision-making even more difficult. Belgium recommends publishing a specific publication with scenarios.

37. Colombia, with reference to the probabilistic approach, made the following comment: "It is considered important to know recommendations regarding the use of specific data for political and economic decision-making of state authorities, before this treatment should be taken into account for the analysis of confidence intervals and their interpretation that in many cases is punctual".

1. **Responses and changes proposed by the Task Force**

38.   In response to Germany's comment about the unequal treatment of benefits and disadvantages of deterministic and probabilistic projections, the Task Force suggests to modify the reference to Appendix E in order to put a larger emphasis on the limitations of probabilistic projections.

39.   However, the Task Force suggests not to move the content of Appendix E in the main text, because of its large size, and because it does not bear the same relevance (in comparison to the limitations of the deterministic approach). Indeed, it seems important to state why so many demographers have criticized the scenario approach in recent years (there is in fact a change of paradigm proposed). It is likely that most NSOs will keep using this approach to communicate uncertainty associated with population projections, and NSOs should warn users of its caveats and limitations and adopt alleviating measures (some are proposed in the document).

40.   The Task Force agrees with Germany that there is no consensus around one single methodology and that it can be a good strategy for NSOs to wait for further developments in the field. The Task Force proposes to acknowledge these facts explicitly in the report.

41.   At the same time, it is doubtful that a perfect consensus will ever be reached. For example, no such consensus can be found about how to elaborate assumptions in a deterministic projection set-up. The document makes it clear that NSOs must weigh the pros and cons of probabilistic projections and make a decision by themselves about it.

42.   The Task Force agrees with Belgium that there are also uncertainties in the mean and distribution resulting from a probabilistic approach, The Task Force suggests to move some content located in Appendix E where these concerns are discussed under Good practice 3.7, and to expand the discussion.

43.   In response to Poland's comments, the Task Force suggests to nuance its recommendation to use a conditional language. Adopting a conditional form can contribute to improve a correct interpretation of projections as the results of assumptions, and not as predictions.

44.   However, projection-makers can opt to adopt another form to lighten the style, and warn users of the correct interpretation in the text. For example, the future tense could be used describe the outcomes that will occur if a set of assumptions were to occur, and the present tense to describe the results associated to a set of assumptions.

45.   The Task Force agrees with Germany that no consensus can be found about how uncertainty analysis can be applied to population projections. The Task Force suggests to acknowledge this explicitly and to recognize that a clear consensus around one standard methodology would greatly simplify the task of NSOs wishing to implement probabilistic projections.

46.   The Task Force understands Japan's concern about the danger that ordinary users misinterpret the prediction intervals. However, experience shows that these users tend to use one single scenario as a prediction without considering its uncertainty. In this context, attaching a prediction interval to a most likely outcome can only trigger some awareness of the uncertainty of a projection. Besides, the two last paragraphs under Good Practice 3.7 recommend projection-makers to clearly state how prediction intervals were made and how they should be interpreted. Consequently, the Task Force does not suggest amending the content of the document on the basis of this comment.

E. Chapter 4 - Foster relationships with users

47. No substantive comments received for this chapter.

F. Appendices and other parts

48. Belgium observed that in the conclusion both terms "forecast" and "projection" are used, and recommended that the difference between the two terms should be made clear.

49. Japan noted that in Appendix E the benefits of the probabilistic projections are emphasized, and the attention should be drawn also to the drawbacks and limitations of these methods.

50. Israel suggested adding references for analytic scenarios such as projections in the case of keeping business as usual. Israel considers analytic scenarios very important to understand the outputs of non-analytical projections.

51. Slovakia noted, with regard to the conclusion, that the text was very general and recommended improving the links between the conclusions and recommendations.

1. Responses and changes by the Task Force

52. The Task Force suggests modifying the content of the conclusion to avoid possible confusion between "forecast" and "projection", as Belgium recommended.

53. Japan's comment refers to Good Practice 3.7. The TF suggests to draw more attention to the limitations of probabilistic projections.

54. The Task Force agrees with Israel that analytical scenarios are also useful to help the understanding of projection outcomes. The Task Force suggests mentioning this under Good Practice 3.8.

55. With regard to the comment by Slovakia, the Task Force notes that the conclusion was written with the objective of taking a larger view on the future of population projections and identifying some areas for new developments. The Task Force suggests for the conclusion to restate more clearly the objective of the document and clarify the link with the key recommendations it provides.

IV. Conclusion

56. All responding countries and organizations supported the endorsement of the recommendations.

57. The comments and views expressed during the electronic consultation were carefully reviewed by the Task Force on Population Projections. In many cases the Task Force recommends amendments to the Recommendations to address the issues raised by the countries and organizations. In other cases the Task Force provides clarifications or explains why – in its opinion - there is no need to amend the Recommendations.

V. Proposal to the Conference

58. In view of the strong support expressed by countries and organizations, the Conference is invited to endorse the Recommendations, subject to amendments presented in this document.

59.   The Conference is invited to advise on the way forward for implementing the Recommendations.

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