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#### Group of Experts on Population and Housing Censuses

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#### Revising the Conference of European Statisticians Recommendations for Population and Housing Censuses for the 2030 round:

#### Emergency preparedness and contingency planning

## Developing the Recommendations on Emergency Preparedness and Contingency Planning

### Note by the Conference of European Statisticians Task Force on Emergency Preparedness and Contingency Planning\*

#### *Summary*

This document includes the draft chapter on Emergency Preparedness and Contingency Planning for the Conference of European Statisticians (CES) Recommendations for the 2030 round of population and housing censuses, and details the process followed to develop this new chapter, which was not present in previous editions of the Recommendations. The main purpose of the document is to elicit comments and suggestions from national census experts on the proposed text, to ensure that it reflects the needs and priorities of national statistical offices.

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## **I. Introduction**

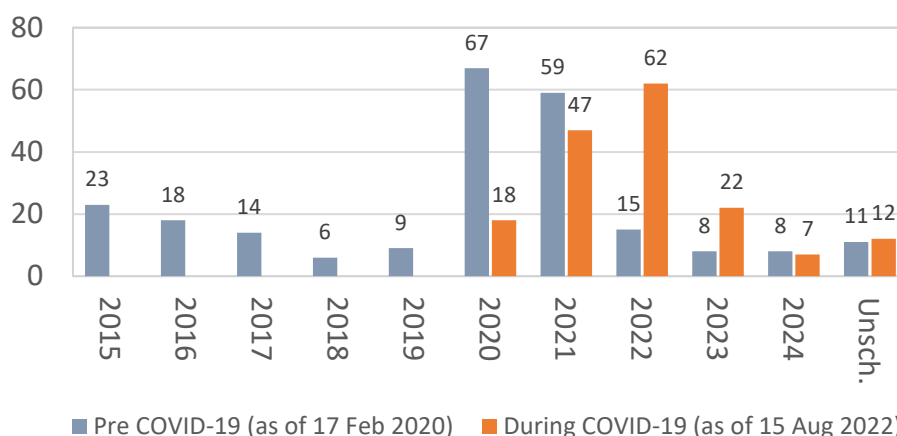
1. Every ten years the Conference of European Statisticians (CES) issues Recommendations to guide countries in conducting their population and housing censuses. The Recommendations are developed by expert task forces overseen by the CES Steering Group on Population and Housing Censuses.
2. Previous editions of the Recommendations did not contain a chapter on emergency preparedness and contingency planning. Section II of this document therefore details the process followed to develop new content on this topic.
3. Section III presents the draft chapter on emergency preparedness and contingency planning for the CES Recommendations for the 2030 round of population and housing censuses.
4. The main purpose of the document is to elicit comments and suggestions from national census experts on the proposed draft text, to ensure that it reflects the needs and priorities of national statistical offices.

## **II. Developing new content on emergency preparedness and contingency planning**

### **A. Introduction**

5. Following the sharing of considerable experience with emergency preparedness and contingency planning, the Task Force developed a framework for the Recommendations and eventually content for a new chapter, which was validated against the results of an associated survey of national statistical offices. Similar content was prepared by the Task Force chair for a revision to the global-level Principles and Recommendation for Population and Housing Censuses which is being developed in parallel by the United Nations Statistics Division (UNSD).
6. The proper conduct of a population and/or housing census requires thorough planning which often spans years of work by dedicated and knowledgeable staff. However, those plans can be interrupted by unexpected and very serious events, such as natural disasters, pandemics, cyberthreats or war. These serious events can lead to a failure, cancellation or delay to a census, if there is not time or ability within a country to respond properly. But it is not just these serious situations that can cause census-takers great grief. Given the enormous complexity of censuses, slower-moving disasters or incidents such as labour issues, anti-government sentiment or technical challenges can cause considerable problems for census managers.
7. On 11 March 2020 the World Health Organization (WHO) declared the COVID-19 outbreak as a pandemic. Already circulating in 114 countries at that time, the virus would go on to touch every part of the planet and would result in considerable death and injury as well as substantial social and economic disruption. The pandemic affected the statistical systems of the world. In fact, according to the 2021 UNSD Survey of COVID-19 Impacts on Censuses, 73 per cent of censuses worldwide were impacted by COVID-19. While the peak year of the recent worldwide round of censuses of population and housing was expected to be in 2020, the actual peak year was in 2022, during which 62 censuses took place. In addition to delays, through its surveys and various Expert Group meetings on the topic of COVID-19 impacts, UNSD also detected impacts to the field operations of traditional censuses, questionnaire content and data quality.

Figure  
Impact of COVID-19 on 2020-round census schedule (2015–2024)



8. These impacts on censuses might not have occurred if better guidance had been available to countries. Post-pandemic reflections on the CES Recommendations for the 2020 Censuses of Population and Housing exposed gaps. In fact, the Recommendations contain very little reference to the topic of emergency preparedness or contingency planning. As a result, in preparing the Recommendations for the 2030 Censuses of Population and Housing, it was decided that an entire new section of the document should be dedicated to the topic. This decision was informed not just by the COVID-19 experience but by the possibility that other natural disasters, cyber-risks and technology dependency would impact census operational risks for the foreseeable future.

9. While the decision was being made to add a section on this topic to the CES Recommendations, similar conclusions were being made during planning for UNSD's 2030 Round version of the Principles and Recommendations for Population and Housing Censuses. A similar gap on emergency management and contingency planning was identified in the Principles and Recommendations, and a decision was made in 2023 to add content to the existing section on planning, organizing and management of censuses. To ensure consistency between the CES and worldwide guidance documents, Canada chaired both of the respective task forces, and there is considerable overlap in proposed content between the two volumes.

## B. Process for the development of new guidance

10. The CES Task Force on Emergency Preparedness and Contingency Planning was established in 2022, with members from Canada (Chair), Mexico, New Zealand, Poland, Portugal, United Kingdom (UK) and UNSD. The development of the new guidance was a process that involved the following:

- (a) Develop a framework for census emergency preparedness and contingency planning;
- (b) Share country experiences within the Task Force;
- (c) Develop content for the UNECE questionnaire and study results;
- (d) Develop and critique new text.

11. The progress of this work was presented at the 2023 Meeting of the Group of Experts on Population and Housing Censuses and proved effective in ensuring a complete analysis of the challenges of emergency preparedness and contingency planning for censuses of population and housing. Numerous virtual meetings of the Task Force took place from late 2022 to 2023, as well as considerable email exchange. By late 2023, a mature draft of the Recommendations text was available.

12. The new CES Recommendations draft also served as proposed content for part of the revision of the corresponding chapter of the UNSD Principles and Recommendations, and therefore also includes and reflects contributions and reviews by a similar Task Team on Census Planning, Organizing and Management established by UNSD, whose membership includes Canada (Chair), Australia, Brazil, Colombia, India, Indonesia, Kenya, the United Arab Emirates, as well as various organizations of the United Nations. A draft of the emergency preparedness and contingency planning content as developed by the CES Task Force was circulated and discussed at the December 2023 UNSD Expert Group Meeting on the Revision of the Principles and Recommendations for Population and Housing Censuses.

13. The new guidance was built with the goal of providing advice for countries wishing to manage issues and risks related to all types of censuses. However, since register-based censuses face fewer risks and do not involve the extensive and complicated planning, sizable workforce and significant logistical challenges associated with fully enumeration-based censuses, much of the new guidance might be of greater relevance to census-taking based on direct enumeration.

### **C. A Framework for Emergency Preparedness and Contingency Planning**

14. Emergency preparedness and contingency planning is a large topic and could mean different things to different people. As a result, the first task of the Task Force was to develop, discuss and agree upon a framework. To structure the new guidance, the following framework was developed:

- (a) Effective documentation of inherent risks and possible mitigations (Risk registry);
- (b) Proper emergency management, governance and decision-making (Emergency management plan);
- (c) Use of practice sessions to condition a proper response (Team conditioning);
- (d) Effective techniques for quick changes to the plan (Flexibility and lean management);
- (e) Development of multiple contingencies in the event of main plan failure (Census planning insurance).

15. This framework was designed to show how to avoid issues in the first place by effectively using the planning phase for risk mitigation, but also how to undertake contingency planning when the inevitable happens: that is, when something goes wrong after the planning phase, when the census is being executed. The framework was also designed to provide support and ideas for when, despite good planning and emergency management, a census has some sort of major breakdown of its intended plan.

### **D. Sharing and documenting country experience with Emergency Preparedness and Contingency Planning**

16. With the framework in hand, Task Force members shared their recent experiences with emergency preparedness and contingency planning, in a series of short weekly sprints, held virtually in early 2023. The goal of these sprints was to develop the expertise needed for effective international questionnaire and recommendation development on the topic.

17. During this period Canada presented on the risk management and contingency planning programme with that country's census, with a focus on the experience of the COVID-19 public health crisis and Canada's 2021 Census of Population. New Zealand shared their approach to risk management and contingency planning for their 2023 Census, including how they manage their risk register and an overview of their government-wide incident management system. Like Canada, Portugal provided the Task Force with their experience managing the COVID-19 emergency, which forced some added use of administrative data to improve the quality of address lists. Finally, Mexico presented and

brought to the Task Force some new knowledge on their risk management framework, based on the International Organization for Standardization (ISO) 31000 standard.

18. Each of these presentations helped shape the questionnaire and ultimately the content that the Task Force is proposing for the Recommendations. For the questionnaire, the presentations provided insight on the sorts of policies, procedures, documentation and expertise of which the questionnaire could take stock. The results of the questionnaire then eventually helped shape the proposed text. Following the country experience discussions, it was decided that the information that the Task Force wanted to collect should be split into two types of questions, with some on risk management and others related to crisis management.

19. The country experience discussions had another, more direct effect on the proposed text, however. It was decided by the Task Force that these country experiences should be part of the Recommendations, and so three country experiences are documented in the proposed text, in the form of short text boxes (one each for Canada, Poland and New Zealand). These text boxes provide examples of how each of these three countries handled census emergencies, and each is consistent with the proposed guidance and helps make the Recommendations tangible.

#### **1. Content Element 1: Documenting Risks and Their Mitigations**

20. It is recommended that the new chapter start with a section on establishing a risk registry. To avoid or manage risk, one must first identify it. Census takers should be aware of their most important risks and set up processes to document them, with a resulting risk registry. These are the challenges that may threaten the proper execution of a census, the quality of the data, the security of the information collected, or the availability of human or financial resources.

21. With each identified risk should come an assessment of the likelihood of the occurrence and the degree of the impact, should the risk come to reality. With an assessment of various risks should be a full awareness of the vulnerability of the census to various threats. This can form the basis of discussions with experts on what actions would mitigate these threats, lowering the likelihood of occurrence and/or the impact of any threat to the census.

#### **2. Content Element 2: Establishing an Emergency Management Plan**

22. Next, the document proposes a section on managing emergencies that can occur during a census. Even with the best risk management plan in place, a census is too complex and too exposed to external factors, to anticipate every potential issue. As a result, the statistical agency should be prepared to respond to the unexpected. With proper emergency management, censuses can effectively weather some very difficult storms.

23. Every census should have a process in place to identify, classify and respond to an unavoidable emergency. First, a census should have all the necessary information to detect any new issues and respond to them using communication lines within the team. For example, if a census is being conducted online, real-time information should be made available from a monitoring of the performance of the internet response solution.

24. When an emergency is detected, it should be assessed for its severity. Once classified, the severity of the emergency should be relayed to the census employees with the decision-making authority to respond. The response should be pre-determined, according to the level of severity. For example, a high-severity event could require a meeting of the full census management team within a short period after detection and require a faster resolution, relative to a low-severity event.

25. To detect and respond to an emergency, a census should have an Operations Centre where employees have access to tools that track relevant data, in the form of a Management Information System (MIS). The MIS will gather information from various systems and present them in a way that allows managers to detect and respond to incidents. In addition to providing access to MIS, the Operations Centre should be a place to meet, discuss and respond to issues. It should be a place where communications crises are managed and should include equipment to record video and to develop other content to be broadcast on the internet

or other media. Should a physical place for an Operations Centre not be available, staff should have all the same tools available to them while working remotely.

### **3. Content Element 3: Conditioning the Staff to Emergency Management**

26. The new chapter should next include information on how to prepare staff to deal with emergencies – a particularly important requirement for censuses, which are only infrequently conducted. It is impossible to anticipate and develop a possible response for all emergency scenarios. Inevitably, a census will need to deal with a problem it had not anticipated, or whose detail is something different than what was predicted. As a result, key census staff should develop an ability, before high-risk stages of a census, to respond quickly and effectively during the execution of a census.

27. To develop this ability, census teams should engage in practice sessions, meant to condition staff on emergency management. These exercises should involve staff members who are aware of emergency management protocols, and should introduce staff to various scenarios based on the risks identified in the risk registry. When the scenarios are presented, staff should reflect on the best next steps that should be taken.

28. During the conduct of the practice sessions, the scenarios should be challenging and the team members may find themselves uncomfortable. The whole point of these sessions is to get used to very difficult scenarios and develop a mental ‘muscle memory’ which allows a better response during a real emergency.

### **4. Content Element 4: Working effectively during an emergency**

29. For the next section, the Task Force recommends guidance on how to work effectively during a crisis. Census teams understand the importance of their work and will likely respond eagerly during an emergency and do ‘whatever it takes’ to ensure success. However, techniques other than hard work and long hours can be applied in an emergency situation, to ensure the completion of the work with efficiency and unnecessary negative effects on the people working during an emergency.

30. During a census emergency, solutions may be complicated and must be found quickly. This was the case with the COVID-19 emergency, which affected multiple components of censuses and where very little time was available for adaptation in many countries. Because of the complexity of censuses and their emergency response, the pace or flow of work may not be easy for the management team to observe. Fast workflow and efficient hand-offs between census staff members or teams will be facilitated by various management techniques.

31. One such technique is the use of Kanban boards. Virtual or physical Kanban boards are a type of ‘to do list’ that allows the manager to see the responses to the census emergency. Statements of problems created by the emergency can be placed on the Kanban board, which can be the focus of regular sprint meetings, to make sure the work to re-establish regular operations is moving at the required pace. The Kanban board is also an effective way for other members of the team to see if there are any implications of the work of another team on their area of responsibility.

### **5. Developing a contingency in the event of main plan failure**

32. Finally, the Task Force recommends text that helps countries deal with worst case scenarios. Despite our best efforts, censuses can fail to reach their planned objectives. Contingency plans can be developed in advance for the most significant risks and should describe activities that will be required by whom and when, the possible impacts to quality, cost and timelines, important dates and a well-developed communications strategy.

33. In a practical sense, when risks are looming, a census taker can respond in a number of ways. The best scenario is that the risk is fully mitigated such that it does not develop into an issue. Another situation might require a cancellation or pause of activities, as was the case for many countries in the 2020 round because of COVID-19.

34. However, if a census risk cannot be fully mitigated or avoided, the issues that are created may not always be manageable. In these situations, the options may be limited but

that should not prevent the census manager from investigating or developing them. One option for direct enumeration-based censuses might be to turn to administrative data to enumerate the population. While the administrative data may not be suitable to replace all planned data variables and on the original timelines, National Statistical Offices (NSOs) may be able to perform the basic function of a census with an administrative population count. For a register-based census, a major disruption would likely involve a communication plan and an adjustment of the timeline of the census, to allow a restart of the process when the disruption has passed.

## **E. Next steps**

35. The Task Force on Emergency Preparedness and Contingency Planning proposes new text in the following section of this paper, for the Recommendations for the 2030 Census of Population and Housing. The Task Force believes that the text is comprehensive and covers the main elements of any risk management and crisis management system, and would be a valuable new part of the Recommendations.

## **III. Draft text for the chapter on emergency preparedness and contingency planning for the Recommendations for the 2030 round of population and housing censuses**

### **A. Introduction**

36. The proper conduct of a population and/or housing census requires thorough planning which often spans years of work by dedicated and knowledgeable staff. However, those plans can be interrupted by unexpected and very serious events, such as natural disasters, pandemics, cyberthreats or war. These serious events can lead to a failure, cancellation, or delay to a census, if there is no time or ability within a country to respond properly. But it is not just these serious situations that can cause census-takers great grief. Given the enormous complexity of censuses, slower-moving disasters or incidents such as labour issues, anti-government sentiment or technical challenges can cause considerable problems for census managers.

37. Unfortunately, the context for census-taking is increasingly complex and risk-prone. Censuses are more complicated and expensive than ever, with new technologies and techniques being adopted to properly enumerate populations. In addition, it seems that these more complex censuses are being administered in a world with added risks. For example, in the 2020 round of censuses, countries managed a worldwide pandemic, increased natural disasters (some associated with climate change), a new level of cybersecurity challenges and tight labour markets. Some countries had time to manage and adapt to the rapidly changing context, and others needed to adapt ‘on the fly’, with varying levels of capacity to do so.

38. As compared with direct enumeration-based censuses, register-based censuses face fewer risks. Register-based censuses do not involve the extensive planning, sizeable workforce, and significant logistical challenges associated with their enumeration-based counterparts. They do, however, face their own challenges, such as availability, completeness and accuracy of administrative sources, data integration and maintenance, and public acceptability, and therefore still require emergency management and contingency planning.

39. In response, this chapter is intended to provide advice for countries wishing to manage issues and risks related to censuses. It is designed to support census-takers in all phases of a census but especially during high-risk periods such as during the field operations of an enumeration-based census. This chapter should also support all census managers, regardless of the type of census that they are undertaking in their country, or the nature of the risks with which they are faced.

## B. A framework for emergency preparedness and contingency planning

40. Emergency preparedness and contingency planning is a large topic and could mean different things to different people. Essentially, the following is designed to show how to avoid issues in the first place by effectively using the planning phase for risk mitigation, but also how to undertake contingency planning to support census takers when the inevitable happens: that is, when something goes wrong after the planning phase, when the census is being executed. The following is also designed to provide support and ideas for when, despite good planning and emergency management, a census has some sort of major breakdown of its intended plan.

### 1. Effective documentation of inherent risks to the conduct of a census, and their possible mitigations (risk registry)

41. To avoid or manage risk, one must first identify it. Census-takers should be aware of their most important risks and set up processes to document them, with a resulting ‘risk registry’. According to the International Organization for Standardization (ISO) in their risk management standard ISO 31000, risks are “...anything that generates uncertainty or creates a deviation from the expected”.

42. In a census context, these are issues that may threaten the proper execution of a census, the quality of the data, the security of the information collected, or the availability of human or financial resources. As one is planning to conduct a census – either enumeration-based, based on administrative data or registers, or combined – time should be dedicated to initial and follow-up discussions with the census management teams, in order to identify and manage risks. Ask yourselves, “what are the threats to this census”? Build upon previous experiences when identifying risks – what happened the last time, and can that happen again?

43. With each identified risk should come an assessment of the likelihood of occurrence and the degree and nature of the impact of the risk if it were to come to fruition. To each of occurrence and impact, a scale should be applied to determine the risk level for each identified risk without mitigation (for example, low, moderate, high or extreme). With this assessment, one should be better aware of the vulnerability of the census to various threats.

44. Next, standard risk management would suggest that census managers and experts discuss mitigations, or ways to lower the likelihood of occurrence and/or the impact of any threat to a census. Statistical agencies may not have the capacity to act on all risks, so prioritize and take action to first mitigate the greatest risks to the census, and/or those risks which are most likely to affect the census in the near term.

45. The best way to deal with a risk is to avoid it altogether through mitigating steps, but not all risks are fully within the control of the statistical agency. It may be important to discuss risk mitigations with external partners, such as Information Technology (IT) contractors, postal agencies, printing firms, media, labour providers, administrative data providers, or any other key stakeholder in the proper conduct of a census.

#### *Country example: Mitigating COVID-19 risks to the Canadian Census*

*The worldwide pandemic was declared about 14 months before Census Day (12 May 2021). It was clear to Statistics Canada that there was both a high likelihood that the field operations of the (enumeration-based) census would be conducted in the context of the pandemic and that with the existing plans there would be a high likelihood of a major detrimental effect on objectives (response rate) without mitigations.*

*To develop these mitigations, early into the pandemic a two-day meeting of field operations experts was organized, with the goal of developing new strategies that would lower COVID-19 risks to data quality, as measured by the collection response rate. These new high-level strategies resulted in multiple ‘outstanding issues’ (OIs) or problem statements, the solutions for which were delegated to staff with the knowledge and skill to address them properly. Each OI was classified according to the census operation and prioritized. High-priority and early-operation OI solutions were developed*



*and approved first by census management. Once approved by census management, the mitigating activities associated with each OI were actioned by the individual teams responsible for those parts of the census. Mitigations were developed for field operations, communications, IT, methodology and processing teams.*

*The process was effective, resulting in over a hundred major changes to the census in a relatively short period of time. By late 2020, the process to establish most risk mitigations was complete, allowing teams to prepare for a new plan that would be actioned in 2021. The Census of Population in Canada managed a very successful field operation despite heavy waves of COVID-19 during the census year, hitting their 98 per cent collection response rate target.*

## **2. Proper emergency management, governance and decision-making (Emergency management plan)**

46. Censuses can be some of the most complex operations that governments undertake. With complexity comes a large number of ‘moving parts’ which will be exposed to events that are not anticipated or even controlled by the census-taker. Natural disasters are a good example: although the census manager may know they can affect their operation, there is no predicting when, where or the extent to which they will impact a census. Even with the best risk management plan and mitigations in place, a census is too complex and, by definition, too exposed to external factors, to anticipate every potential issue. As a result, the statistical agency should be prepared to respond to the unexpected. With proper emergency management, governance and decision-making, censuses can weather some difficult storms very effectively.

47. Every census should have a process in place to identify, classify and respond to the inevitable emergency. Key members of the census team should know what to do in case of emergency during crucial phases of their census. They need to be able to determine whether an emergency is underway, how to classify the severity of the emergency, whom to contact when it occurs and how contact can be made, so that solutions can be put into place.

48. If the current activities are being impacted by an unforeseen event, the census has an emergency. Census team members must have available to them the necessary information to detect any new issues and respond to them using communication lines to other team members, senior officials and perhaps the general public. For example, in today’s census environment, censuses that are based on direct enumeration are making greater use of internet questionnaires, so real-time metrics can be monitored to ensure the proper functionality of that service for the public. Or, both for enumeration-based and for register-based censuses, the massive databases need monitoring for cyberthreats. Should there be an issue detected during such monitoring, the person viewing that information must be able to interpret what is happening, classify the degree of the emergency and communicate to others to establish a plan and resolve the issue.

49. When the emergency is detected, it should be assessed for its severity. Census team members responsible for the component of the census impacted by the event should be trained on various severity definitions during the planning phase of the census (i.e. before the census is executed). In the example in the paragraph above, when the event impacting the internet response service is detected, the information should be shared with the census manager responsible for that service, who is trained and authorized to determine the emergency’s severity level. Is what is being detected a slowdown of the service that might be of minor annoyance to the user? Or, are there indications of a broad interruption of internet response, such as a cyberattack?

50. The severity level of the emergency as determined by the responsible manager should trigger a pre-determined response. For example, a high severity event could require a meeting of the full census management team within a short period (e.g., no later than one hour) after detection, and require faster resolution, relative to a low severity event. At that meeting, the situation should be described by the responsible manager, who should then present information on the nature of the emergency, its cause (if known), and any remediations. If possible, there should be an estimate of when any impacted census operations will be fully

operational again, which will be particularly valuable for communications and any downstream activity that may experience a subsequent impact.

***A new threat to censuses: dis/misinformation***

*Censuses face a new threat of dis/misinformation, which is unlikely to go away any time soon. Exploiting weakness in internet literacy and mistrust in government, sophisticated actors can launch campaigns to divert attention away from a census or to embarrass governments by disrupting operations. Censuses now need to invest in tools to monitor social media, the most common channel through which dis/misinformation campaigns are conducted.*

*These 'social listening' tools comb through large databases of publicly available social media posts to find incorrect information being shared about censuses. When detected, a statistical agency can decide to intervene as appropriate with responsive communication tactics, to correct the record and re-establish the facts regarding the census. Not all situations will be the same, and some require the development prior to the execution of a census, of relationships with major social media companies. If a major dis/misinformation campaign is detected, the statistical office should be able to quickly contact the platform(s) on which the incorrect information is circulating, and request that posts be removed before more damage is inflicted on the census. Other interventions may be necessary, such as countering the offending posts with information in the social media accounts of the statistical agency, or through 'fighting misinformation' pages on the statistical agency's website.*

*While powerful and effective, social listening tools must be used carefully, however. While reviewing only publicly-available information, there is a risk that government census-takers could be perceived as invading privacy. As a result, before these tools are used, privacy experts should be consulted and offered an opportunity to approve or reject the proposed social listening.*

51. In more complicated, high-visibility or prominent situations, managers should promptly report anticipated or actual problems to their manager responsible for communications, to get the required guidance, advice and support to maintain the public's confidence in the census.

52. Timeliness is critical to building trust. If the statistical agency does not fill in the information vacuum, others will. Timely communications can minimize the impacts of challenges, risks or issues. During an emergency, information demands increase, both internally – briefing up and across, and externally – the public, media, partners, stakeholders. Aligning efforts is important to ensure the information provided to the public is consistent.

53. Messaging needs to consider the public's perception of risk and address specific concerns to be effective. In addition, the need to protect operationally-sensitive information must be balanced with the desire to be transparent in communications to and with the public.

54. To detect and respond to an emergency, a census should have an Operations Centre where employees have access to tools that track relevant operational data. When a census is underway, a number of operational metrics are available to staff, who should be presented with those data in real time and with an archive for reference as well. Prior to the execution of a census, those data can be specified in advance, using expertise from previous cycles. The resulting 'Management Information System' (MIS) will gather information from various systems and present them in a way that allows managers to detect and respond to incidents.

55. In the event of an emergency, census managers should be prepared to communicate within their organizations. As mentioned earlier, priority should be taken to communicate first with the census team, to ensure a timely response. However, internal communication to senior leaders in the organization and political staff may be required, depending upon the severity of the incident. Also, should they be implicated in the response, or impacted by the emergency, external contractors may need to be notified.

56. In addition to providing tools for employees tracking MIS systems for signals of trouble, the physical Operations Centre can be a place to meet to discuss the issues and respond. The Operations Centre should be a place where communications crises are managed and should have access to facilities and equipment to record video and to develop other content to be broadcast on the internet and other media. To monitor any ongoing situations and detect any new ones, the facility should have access to television, radio and internet broadcasts.

57. It is recommended that the Operations Centre be both a physical and virtual space. Should a physical space not be available (which was the case for many countries during the COVID-19 emergency), staff should have all the same tools that exist in the Operations Centre available to them while working remotely. From a location away from the census office, the fundamental requirements for staff should be to have access to MIS and other reports, and have an ability to communicate via phone and video calls. Any capacity to respond to an emergency should not be impeded by the closure of a census management office location.

### **3. Use of practice sessions such as ‘tabletop exercises’ to condition staff on how to react in the event of a crisis to a census (team conditioning)**

58. While it is impossible to anticipate all possible scenarios, key census staff should be prepared for anything. After establishing a risk registry and emergency management protocols, prior to the execution of a census, census teams should practice what they might encounter. These practice sessions can take various forms and can be adapted for different types or levels of census staff. For example, one might be targeted toward IT staff, while another might be for the management team.

59. These exercises are an effective method to condition census staff on emergency management. The exercise should involve staff members, who should be made aware of all (generic) emergency management protocols already developed. With that knowledge in hand, participants in the exercise will be introduced to various scenarios, which should be based on potential issues identified in the risk registry. When the scenarios are presented, staff should reflect on the best next steps that should be taken. Everyone at the sessions should be expected to contribute and provide feedback on the reflections of other team members to the scenarios.

60. During the conduct of practice exercises, team members may find themselves uncomfortable. This is part of the nature of the exercises – the whole point should be to get used to very difficult situations. As a result, participants will find themselves unsure of what to suggest as solutions to the situations they are practicing. Furthermore, these practice sessions should include scenarios which are progressively more difficult to deal with. It will be impossible to imagine and practice all scenarios that census managers might find themselves in. However, they should be realistic and designed by knowledgeable individuals who use the previously developed risk registry. The sessions should not seek to develop an ability within the team to know all steps to follow in all emergencies, but instead the sessions should develop a more general ability within the census team to respond quickly and effectively during the execution of a census.

#### ***Country example: updating methodological, organizational and technical assumptions as a result of the COVID-19 pandemic in Poland***

*In Poland, the COVID-19 pandemic started in the period when Statistics Poland was preparing to conduct the second round of testing before the main census activities.*

*As per the organizational plan, the census in Poland was preceded by two trial censuses, which were intended to verify the planned methodological, organizational and technical solutions. The focus was on verifying conceptual assumptions, testing the architectural framework, and operational principles.*

*The second of these census tests was scheduled for April 2020, less than a month after the declaration of the COVID-19 epidemic in Poland. Initially, Statistics Poland considered abandoning this test. However, it was decided to*

*carry it out while taking necessary precautions to protect the health of respondents and census enumerators. In addition to the original objectives, the second trial census was also intended to test the flexibility of the management system and its resilience to crisis events in the face of an existing pandemic. The experience and observations gained from it contributed to the introduction of many changes for the actual census, which was conducted in 2021 under pandemic conditions.*

*Key changes included:*

- introduction of flexibility in the use of computer-assisted telephone interview (CATI) and computer-assisted personal interview (CAPI) channels, by field enumerators and the on the same mobile device;*
- access to a larger telephone database of respondents, by extending the list of registers used to prepare the list of persons and addresses;*
- extension of the census operations period from three to six months, while monitoring the need to extend further or to temporarily suspend data collection (in the event of a high wave of illnesses);*
- maximum emphasis in communication to the public was given to the use of the available internet response channel;*
- a shift to 100 per cent remote work for office staff.*

*With the 2021 census occurring under pandemic conditions, the census was affected by changes to the behaviour of the population due to health risks and restrictions on basic freedoms. As a result, it was necessary to monitor the data collection phase even more rigorously than under 'normal' conditions, in order to take additional ad hoc measures, as necessary.*

*These solutions were successful, as evidenced by the successful and timely completion of the census. A high completion rate of the census was achieved, resulting in good quality data. In addition, the safety of staff and the population was protected by a strong focus on the internet response, which also allowed Statistics Poland to achieve significant financial savings over the planned census budget.*

#### **4. Ensuring fast workflow during an emergency**

61. Census teams understand the importance of their work and therefore respond well during emergencies. Without structure and good management, some census teams will work to do 'whatever it takes' to ensure success despite setbacks. However, techniques other than hard work and long hours can be applied in an emergency situation, to ensure the completion of the work without unnecessary negative effects on the people working during the emergency.

62. One likely requirement of a census emergency will be fast workflow and strong communication to ensure the impacted components of the census are aware of what is changing, so they can adapt as well. During a census emergency, solutions must be found quickly and acted upon appropriately. As described above, once an issue is detected a quick response will be required.

63. The census manager in the statistical organization has an obligation to orchestrate the census team such that the resolution to the problem is efficient and effective. Lean management techniques can be applied, such as Kanban boards and quick, frequent 'stand up' or 'sprint' meetings. Lean management techniques such as these should be applied in order to make sure the full census team is working on the correct priorities and that these new priorities are communicated to the affected team members.

64. Census-takers run a sort of data factory. There is an assembly line of inputs that are being transformed into data outputs, and the factory line must continue running, even when it is impacted by some unforeseen event. This data factory, unlike the manufacturing factory, has elements that remain hidden from view by the manager and team members. Depending

upon the severity of the emergency, the census manager and the broader team may feel the need to find ways to see what changes are required to remedy a crisis, to ensure priorities are being actioned and at the speed necessary.

65. One way in which census managers can ‘see’ the factory line is to create virtual and real Kanban boards during an emergency. The Kanban technique will have the team develop and act upon problem statements describing the response to an emergency. For example, if there has been an attempted cyberattack, a problem statement might declare an issue that needs to be resolved, such as “Re-open internet portal” and a team is assigned to resolve the issue. There might be related issues created by the cyberattack, for the communications team or the downstream operations. After the creation of the various issue statements, they can be placed into a ‘to do list’ or Kanban board. The census manager thus has an optic on the work created by the emergency, and can meet with the team regularly, perhaps in the form of quick sprint meetings, to make sure the work to re-establish regular operations is moving at a fast pace. The Kanban board is also an effective way for other members of the team to see if there are any implications of the work of another team on their area of responsibility.

## 5. Developing a contingency in the event of main plan failure

66. Despite our best efforts, censuses can fail to reach their full objectives. Disruptions to the execution of a census are inevitable and may severely impact the expected data quality. Contingency plans can be developed in advance for the most significant risks, particularly in situations where advance planning can help ensure a thoughtful, integrated, and comprehensive response. Such plans describe activities that will be required by whom and when, possible impacts to quality, cost and timelines, important dates to be considered, and a well-developed communications strategy. A contingency plan’s efficacy is further amplified by active management involvement, which helps to ensure that plans are comprehensive, realistic, and applicable, and the extent to which resources and support will be available or could be recruited.

67. In a practical sense, when risks are looming, a census-taker can respond in a number of ways. The best scenario is that the risk is fully mitigated such that it does not develop into an issue. Another situation might require a census-taker to cancel or pause a census, as was the case for many countries in the 2020 round when they were impacted by the COVID-19 pandemic. However, if a census risk cannot be fully mitigated or avoided, the issues that are created may not always be manageable. So much can be beyond the control of the census-taker, and with censuses becoming increasingly complex (such as with combined censuses or those using large amounts of administrative data from multiple sources), there is always the risk that the main plan fails. What does a statistical agency do in that case?

### ***Country example: Responding to a Category Two Cyclone in the New Zealand Census***

*Like many countries around the world, New Zealand is susceptible to extreme natural events. These have impacted census-taking in the past, including the 2011 Census which had to be delayed by two years following a major earthquake in Christchurch.*

*Early in the 2023 Census lifecycle, ten significant risks were identified by Statistics New Zealand which could impact running a successful census (including a natural disaster risk) due to past experiences. In the planning phase an Incident Management Plan (with three severity levels) and an Operations Plan were developed, in which the roles required to run the census operations centre were identified. Census managers were trained in a New Zealand government-wide incident management system to enable coordinated responses with other government agencies, including Police and Civil Defence, if required.*

*In the Census Dress Rehearsal, one year out from Census Day, the Incident Management Plan and Operations Plan were tested and reviewed and refined afterwards. In the build-up to the Census Day in March 2023, a series of incident practice exercises ranging in severity and for a variety of scenarios was conducted. Some of these scenarios also involved members of the*

*executive governance board overseeing the census so that they understood their roles if an incident was rated sufficiently significant to trigger their active involvement.*

*On 13 February, two days before the start of the census field operation, Cyclone Gabrielle reached New Zealand. Even before it hit, incident management processes had commenced, with the pending extreme weather event being triaged as a level three incident – the most severe. As the incident response kicked in, everybody knew their roles, how to fulfil them, and who the decision-maker was, thanks to the preparation that had taken place previously. By the time the devastating impact of the cyclone was known, a decision had already been made to delay the census field operation in affected areas and to proceed with caution in unaffected areas. Government funding to cover the additional costs was secured at short notice and a recovery plan was also in preparation with strong engagement and involvement of local communities in the affected areas.*

*A month after the cyclone, the field operation commenced in cyclone-affected areas. With a mixture of using some prepared contingency plans, some new plans developed ‘on the fly’ and strong local community support it was possible to complete a successful collection operation in areas still dealing with the aftermath of the cyclone. The overall successful delivery of the 2023 Census in New Zealand was made possible by the emergency planning and preparedness that took place beforehand.*

68. Unfortunately, the options may be limited. For countries conducting enumeration-based censuses, there may be an option to accelerate plans to use administrative data. While the available administrative data may not be suitable to replace all planned data variables and on the original timelines, NSOs may be able to perform the basic function of a census with an administrative population count. If the risk of main plan failure is high enough, an NSO might consider a parallel administrative count, to ensure the timely delivery of population counts in any scenario.

69. While it may not be considered as such, a robust administrative data plan for enumeration-based census-takers can be an effective ‘insurance plan’, and therefore an incentive for investment in administrative data, technology to manage it, and expertise within the census team on how to use administrative data properly for census-taking.

70. For register-based censuses, a disruption of the census would likely involve a communication plan and an adjustment of the timeline of the census, to allow a restart of the process when the disrupting event has passed. If this is the case, there would be an impact on other programmes that are dependent upon the census, such as an extension or temporary introduction of intercensal population estimates.

## **6. Extending risk management practices**

71. Each statistical agency faces a unique journey in establishing and maturing risk and crisis management practices. When they first adopt these practices they face foundational challenges and often must focus on developing initial risk assessment frameworks, securing buy-in from stakeholders, and integrating risk and crisis management into planning. In contrast, as agencies mature in their ability to manage risk, they often grapple with different issues, such as deepening stakeholder engagement, integrating tool support across teams, and fostering a culture that emphasizes risk management at all levels.

72. By proactively managing risks, a statistical agency enhances its credibility, supports informed decision-making, improves efficiency, and fosters organizational resilience. Ultimately, such an investment is a testament to the agency’s commitment to excellence and accountability in serving the public interest.

## **IV. Conclusion**

73. The draft recommendations on emergency preparedness and contingency planning for the 2030 round of population and housing censuses are presented for comments and discussion.

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