

Guideline to Planning and Preparing Administrative Register based censuses in GCC Countries

Aug 2019



Table of Contents

Introduction	6
Section 1 Overview	8
1.1 Population Census Planning Resources	8
1.2 Definitions of Population and Housing Censuses	8
Figure 1 International Definitions of Population and Housing Censuses	8
1.3 Census Cycle.....	8
Figure 2 Census Cycle.....	9
Key Phases in Census Cycle.....	9
1.4 Census Collection Methodologies.....	10
1.5 Administrative Register Census	10
Figure 3 Register based Census.....	12
Section 2 GCC 2020 Census project	13
2.1 Harmonised Register-based 2020 Census Project	13
2.2 Country Implementation Plans	13
Table 1 2020 Census Country Implementation Plan – Objectives and Sub-objectives	14
Section 3 Project Management Concepts.....	15
3.1 Introduction	15
3.2 Project Planning concepts.....	15
Table 2 Example of Census Project Structure	16
3.3 Preparing the Project Plan	16
Figure 4 Project Planning Techniques.....	17
Figure 5 Bottom-Up Review Steps	18
3.3.1 Project Planning Helpful Hints	18
3.3.2 Project Interdependencies.....	18
Figure 6 Dependency Relationships.....	19
3.3.3 Project Management Software.....	19
3.4 Budgets for Administrative Based Censuses.....	19
3.5 Resource Scheduling	20
3.6 Monitoring and Controlling.....	21
Figure 7 Progress Measures.....	22
3.7 Risk Management	23
3.7.1 Identifying Risks	24
Figure 8 Risk Register template	24
3.7.2 Risk Assessment and Understanding	24
Figure 9 Risk Likelihood-Impact Matrix.....	25
Figure 10 Example of Risk Mitigation Plan for Administrative Register Census.....	25
3.7.3 Responding to Risks	25

Figure 11 Example of Risk Management Plans for Administrative Register Census	26
3.7.4. Monitoring Risks	26
3.8 Project Closure	26
Section 4 Planning the Administrative Register Based Census.....	28
4.1 Overview	28
4.2 Using the Census Country Implementation Plan planning framework	28
Table 3 2020 Census Country Implementation Plan – Country specific Activities and Deliverables for the Harmonised Register based 2020 Census.....	29
4.3 Planning and Monitoring	30
4.3.1 Planning and Monitoring Objectives/Deliverables	30
Table 4 Planning and Monitoring Objectives/Deliverables	30
4.3.2 Planning and Monitoring Activities and Tasks	30
Table 5 Administrative Census Planning and Monitoring Activities and Tasks	31
Planning and Monitoring Activity/Task Descriptions.....	32
4.4 Initial Preparation	33
4.4.1 Initial Preparation Objectives/Deliverables	33
Table 6 Initial Preparation Objectives/Deliverables	33
4.4.2 Initial Preparation Activities and Tasks	33
Table 7 Initial Preparation Activities and Tasks	34
Initial Preparation Activity/Task Descriptions.....	35
4.5 Preliminary Technical Preparation.....	35
4.5.1 Preliminary Technical Preparation Objectives/Deliverables	35
Table 8 Preliminary Technical Preparation Objectives/Deliverables.....	35
4.5.2 Initial Preparation Activities and Tasks	35
Table 9 Initial Technical Preparation Activities and Tasks	37
Initial Technical Preparation Activity/Task Descriptions	39
4.6 Detailed Preparation and Testing – Administrative Census	41
4.6.1 Detailed Technical Preparation and Testing – Administrative Census - Objectives/Deliverables	41
Table 10 Detailed Technical Preparation and Testing – Administrative Census - Objectives/Deliverables	41
Detailed Technical Preparation and Testing – Administrative Data - Activities and Tasks.....	41
Table 11 Detailed Technical Preparation and Testing, Administrative Activities and Tasks.	42
4.6.3 Detailed Technical Preparation and Testing, Administrative Activity/Task Descriptions....	43
4.7 Detailed Preparation and Testing – Fieldwork Component.....	44
4.7.1 Detailed Technical Preparation and Testing – Fieldwork - Objectives/Deliverables	44
Table 12 Detailed Technical Preparation and Testing Fieldwork Objectives/Deliverables	45
4.7.2 Detailed Technical Preparation and Testing, Fieldwork Activities and Tasks	45

Table 13 Detailed Preparation and Testing Fieldwork Activities and Tasks	45
4.7.3 Detailed Technical Preparation and Testing Fieldwork Activity/Task Descriptions.....	46
4.8 Implementing the Census	47
4.8.1 Implementation Objectives/Deliverables	47
Table 14 Implementation Objectives/Deliverables	47
4.8.2 Data Collection Activities and Tasks	48
Table 15 Data Collection (Administrative and Fieldwork) Activities and Tasks	48
Data Collection Activity/Task Descriptions	48
4.8.3 Processing Activities and Tasks	49
Table 16 Processing Activities and Tasks	49
Processing Activity/Task Descriptions.....	50
4.8.4. Analysis Activities and Tasks	50
Table 17 Analysis Activities and Tasks	51
Analysis Activity/Task Descriptions.....	51
4.8.5 Dissemination Activities and Tasks	52
Table 18 Dissemination Activities and Tasks	52
Dissemination Activity/Task Descriptions.....	53
4.8.6 Evaluation Activities.....	54
Table 19 Evaluation Activities and Tasks	54
Evaluation Activity/Task Descriptions.....	55
4.8.7 Archiving and Documentation Activities.....	55
Table 20 Archiving and Documentation Activities and Tasks	56
Archiving and Documentation Activity/Task Descriptions	56
4.9 Stakeholder Management	57
4.9.1 Stakeholder Management Objectives/Deliverables	57
Table 21 Stakeholder Management Objectives/Deliverables	57
4.9.2 Collaboration and Stakeholder Management Activities and Tasks	57
Table 22 Collaboration and Stakeholder Management Activities and Tasks.....	57
4.9.3 Collaboration and Stakeholder Management Activity/Task Descriptions.....	58
Section 5 Overall Challenges in an Administrative Register based Census Project	58
Table 23 Challenges in Administrative Register Census Projects	59
Appendices.....	61
Appendix 1 2020 Census Country Implementation Plan framework	61
Appendix 2 IT in the Administrative Register Census	63
Overview	63
Strategic Assessment	63
Specific IT considerations for Administrative Censuses.....	63
Outsourcing Considerations.....	64

Appendix 3 Budget Items and Skills required for an Administrative Register Census	67
Costs of European register censuses in the 2010 Round.....	67
Table 24 Collection Methods in selection of European countries, 2010 round	68
Table 25 Costs of Register Based Censuses in 2010 round.....	69
Cost Components.....	69
Table 26 Operating Cost Distribution by Census Methods, used in European countries in the 2010 round.....	70
Skills and people resources needed for Administrative Register Census	70
Organisational Structure	71
Figure 12- Generic Census Management Structure.....	73
Appendix 4 Example of Census Plan	74
Appendix 5 References	87
General.....	87
GCC-Stat Planning documents	87
Project Management	87
Population and Housing Census.....	87
Statistical Concepts and Definitions	88

Introduction

A Population and Housing Census is a complex undertaking for any statistics office. The planning, management and undertaking requires the application of good planning and management techniques and skills to the preparation and execution of a complex set of statistical and operational activities. For countries preparing to transition to an administrative register project, there are even more complexities to understand and manage.

These guidelines has been prepared to help statistical offices in the GCC region who are preparing to move to administrative register based censuses. They are intended to be used by countries to help plan their census projects. They may also be useful as a checklist for those that have prepared some or parts of their plans.

They bring together project management principles, and the statistical principles and practices involved in the planning, preparing and conducting of administrative register based censuses.

Planning is the process of organising, managing and monitoring in a consistent way to ensure that the project meets the agreed objectives. Planning an administrative census draws on both planning and project management disciplines, and the statistical activities and tasks required for the preparation and implementation of all steps of an administrative census.

These guidelines therefore draw on both project management disciplines and Administrative Population Census frameworks.

While the guidelines will be of particular use to people involved in preparing, planning and managing administrative register based censuses, they may also be of use to people involved in preparing and planning statistical outputs based on surveys or surveys and administrative records.

Section 1 begins with an overview of an Administrative Census project, in the context of international census frameworks. Section 2 introduces the GCC 2020 Census project, including the project roadmap and Country Implementation Plan. Section 3 provides an overview of project management, including the concepts of project planning, monitoring and controlling, and risk management.

Section 4 focuses on the planning of an Administrative based Census. This section uses the Country Implementation Plan framework introduced in Section 2. It starts with the key strategic activities, moves through the preparation activities, and then presents the key operational activities in the Collection/Collation, Processing, Analysis, Dissemination and Evaluation Phases. Excluded are participation in GCC Harmonised or other regional or international activities, and capacity development activities.

Section 5 provides a brief description of some of the overall challenges that need to be managed in an administrative census.

The guideline also contains appendices.

- Appendix 1 presents the full version of the GCC Country Implementation Plan framework, showing both country and GCC –Stat activities
- Appendix 2 provides a summary of some of the specific Information Technology and Management considerations for an administrative based census. It also discusses considerations in relation to outsourcing.

- Appendix 3 discusses Budget Items and Skills required for an Administrative Register based Census. Baseline information from other countries experiences in the 2010 round are also included.
- Appendix 4 is an example of a Census plan. This example is a schedule of the Activities and Tasks described in Section 4, using the tools and techniques discussed in Section 3.
- Finally, Appendix 5 provides a list of references and resources.

Section 1 Overview

These guidelines are concerned with planning an Administrative based Census in the GCC. Census projects throughout the world have a common purpose - to provide accurate and reliable information on the number of people at small area, regional and national levels, and their characteristics. This is fundamental for government, civil societies, academics and researchers, as well as for the public. Governments, for example, make many key decisions based on census results.

The planning and preparation of the census therefore must reflect this. The planning of any census must be done carefully and thoroughly, to ensure that all steps of the census cycle are covered.

1.1 Population Census Planning Resources

A number of international standards and resources have informed these guidelines. The base of the statistical content are the UN Principles and Recommendations for Population and Housing Censuses – Revision 3¹, *Generic Statistical Business Process Model, GSBPM, Version 5, December 2013*², and the Handbook on Census Management for Population and Housing Censuses, 2001³. The discussion on Administrative Censuses has also been informed by the experiences of European countries in the 2010 round⁴ and preparations for the 2020 round⁵. The guidelines have also been informed by project management literature. The full range of references are contained in Appendix 5.

1.2 Definitions of Population and Housing Censuses

The International definitions of Population and Housing Censuses are clear that the census process includes all the steps – from planning through to the analysis and dissemination of statistics. These definitions are shown in Figure 1.

Figure 1 International Definitions of Population and Housing Censuses ⁶

Population census	Housing census
Total process of planning, collecting, compiling, evaluating, disseminating and analysing demographic, economic and social data on all persons	Total process of planning, collecting, compiling, evaluating, disseminating and analysing statistical data relating to the number and condition of housing units and facilities

1.3 Census Cycle

All censuses follow a standard cycle, with each phase dependent on the previous phase. This means that the quality of the output of any phase has a direct effect on the success of the next phase and ultimately the overall project. Planning and Monitoring have a critical role in linking the cycle together as shown in Figure 2.

¹ UN Principles and Recommendations for Population and Housing Censuses – Revision 3
http://unstats.un.org/unsd/statcom/doc12/BG_Censuses.pdf

² *Generic Statistical Business Process Model, GSBPM, Version 5, December 2013*, United Nations Commission for Europe,
<http://www1.unece.org/stat/platform/display/GSBPM/GSBPM+v5>

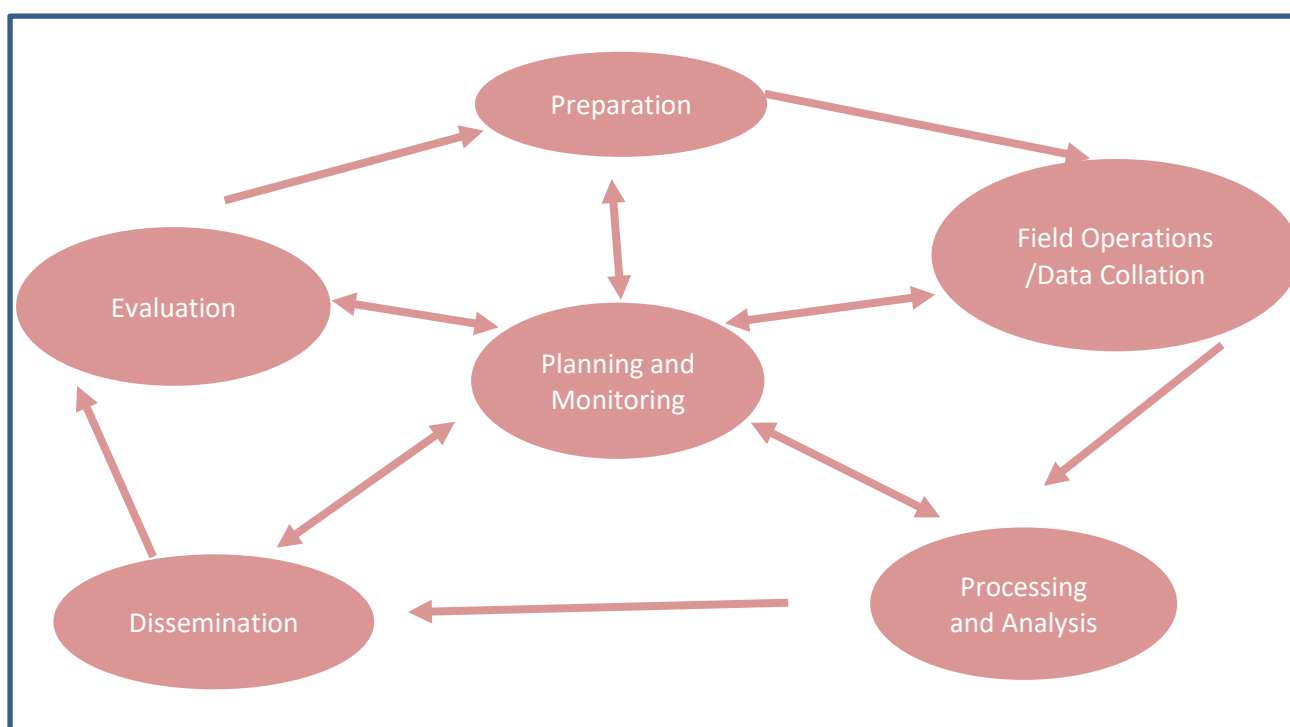
³, *Handbook on Census Management for Population and Housing Censuses*,
http://unstats.un.org/unsd/publication/SeriesF/seriesf_82rev1e.pdf

⁴ See for example Practices of UNECE Countries in 2010 Round of Censuses –
<http://www1.unece.org/stat/platform/display/censuses/Collection+of+papers+on+transiton+to+new+census+methods>,

⁵ See for example *Conference of European Statisticians Recommendations for the 2020 Censuses of Population and Housing*, http://www.unece.org/fileadmin/DAM/stats/publications/2015/ECE_CES_41_WEB.pdf

⁶ UN Principles and Recommendations for Population and Housing Censuses – Revision 3
http://unstats.un.org/unsd/statcom/doc12/BG_Censuses.pdf

Figure 2 Census Cycle



Key Phases in Census Cycle

These phases are consistent with the Generalised Statistical Business Processing Model (GSBPM)⁷. In this model, the Preparation phase includes the GSBPM phases of Specify Need, Design and Build.

Planning and Monitoring

These are the project management activities such as project planning, budgeting, project monitoring and controlling. These support the technical and operational work, to help ensure that the project meets its objectives.

Preparation

This phase covers all the preparation activities. These activities cover identification of requirements, as well as the detailed technical and statistical work to define and prepare the statistical outputs, concepts, methodologies, collection instruments and operational processes.

This phase also includes the activities necessary to build and test the statistical processes and systems, including the supporting IT systems and infrastructure.

At the conclusion of the preparation phase, the project is ready to go live.

Field Collection/Data Collation

This phase, also known as Enumeration, covers the activities involved in the collection of data. This may occur directly through fieldwork or indirectly using data already recorded in administrative registers.

⁷ For more on GSBPM, see *Generic Statistical Business Process Model, GSBPM, Version 5, December 2013*, United Nations Commission for Europe, <http://www1.unece.org/stat/platform/display/GSBPM/GSBPM+v5>.

Processing and Analysis This phase involves the cleaning of data, preparation for analysis and then the subsequent analysis. Processing includes a number of sub-processes that check, clean, and transform input data, including coding and editing.

Analysis involves the production of statistical outputs, detailed examination and preparing the statistical reports for dissemination.

The Processing and Analysis activities can be iterative and parallel. For example, investigations undertaken in Analysis may identify the need for additional processing. Additional analysis may then be required.

Dissemination

This phase covers all the activities associated with the release of the statistical products to customers and clients. These activities include support for customers to access and use the outputs.

Evaluation

The focus here is on the activities needed to evaluate the overall quality of the results from a statistical perspective. The activities may include, for example, preparing, conducting and analysing a coverage assessment study such as a Post Enumeration Survey, and/or conducting Demographic analysis or Matching studies. (There is also a clear link to the project management evaluation and closure activities included in **Planning and Monitoring**.)

1.4 Census Collection Methodologies

There are a number of possible methodologies for conducting Population and Housing censuses. These include:

1. Fieldwork (Traditional) Census – may include electronic (e.g. internet collection). All persons and housing units are enumerated at the same time.
2. Administrative (Register) Census – all data collected from existing administrative sources – no fieldwork involved
3. Combined Census using Administrative and Fieldwork methodologies
4. Rolling Census – where part of the country is enumerated every year, using a systematic sample
5. Administrative Census supplemented by sample surveys

Irrespective of the collection methodology, all census projects will follow the cycle described in Figure 2 above.

1.5 Administrative Register Census

An Administrative Register Census uses records from government or similar administrative processes as the data source to produce statistical information about people and housing units.⁸

The base of the Administrative Register Census method is a series of Base Registers, derived from administrative records and processes. The Population Register, which may be based on Identity Cards, or similar records, provides the backbone for Population Statistics. This Register contains a unique record for each person in the population. An accompanying Housing or Address Register contains a unique record for each housing unit, including the geographic location.

⁸ Similar processes apply to the use of Administrative records in a Combined Census, which uses Administrative and Fieldwork

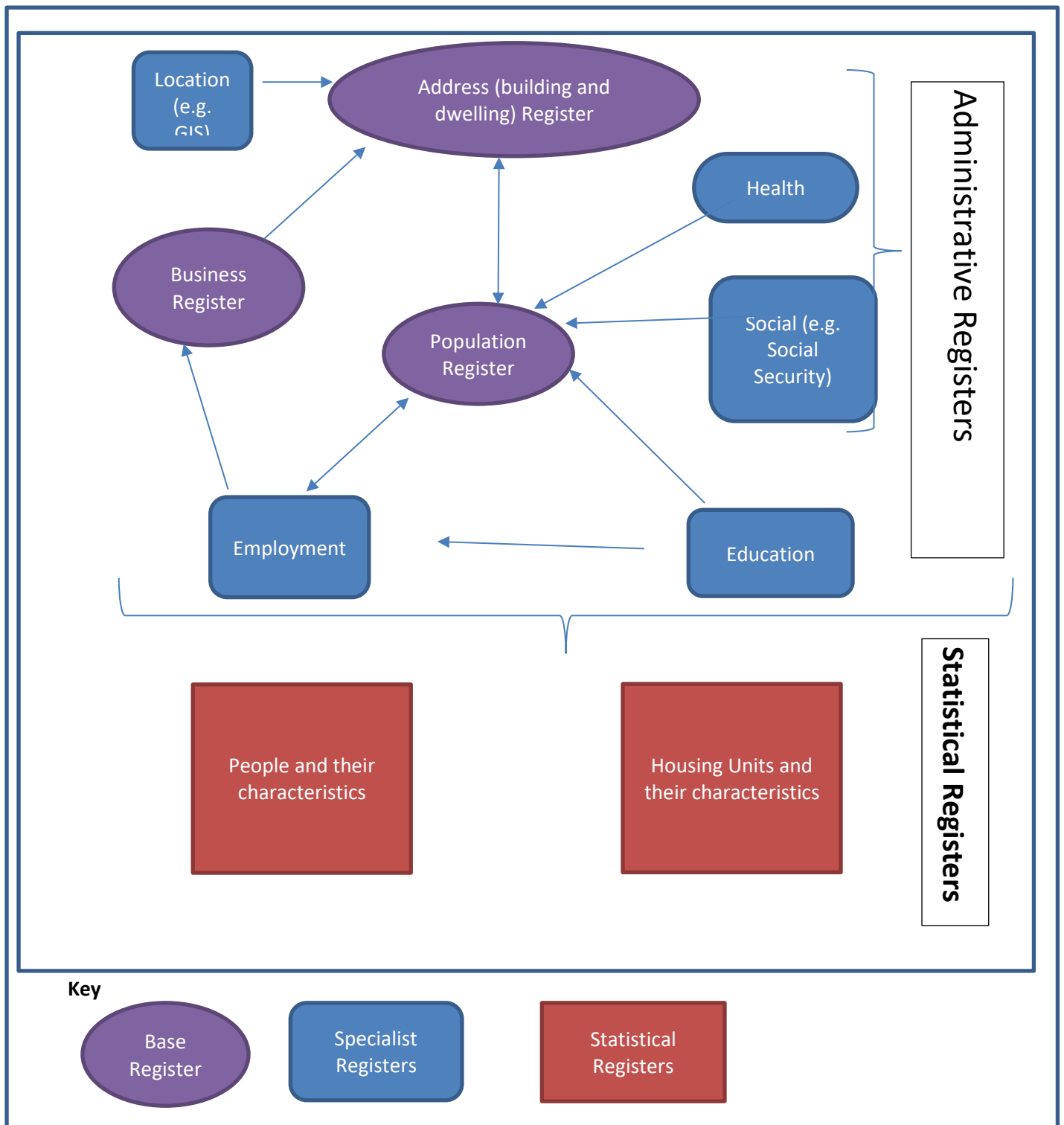
Specialist registers containing specific information about People or Housing Units/Addresses; provide the data about characteristics. Figure 3 illustrates how the Administrative Register census is built up from the Base and Specialist Registers.

Information from the base administrative registers (Population, Address and Business) is linked with specialist registers (e.g. employment, health, education, social assistance). Two main statistical register based databases are created – one for People and their characteristics, and one for Housing Units and their characteristics.

The process of creating the statistical registers replaces the collection of data using Fieldwork. However, if a combined census is necessary (perhaps because the administrative registers do not contain all the necessary information), then a separate stream of activities will be required to collect the data using some form of fieldwork.

In both cases, all the other phases of the census cycle described in section 1.2 apply.

Figure 3 Register based Census



Section 2 GCC 2020 Census project

2.1 Harmonised Register-based 2020 Census Project

The Harmonised Register-based 2020 Census is one of the priority projects⁹ established and agreed by the GCC-Stat Board in early 2015. The 2020 Census project has two objectives.

1. Using administrative sources, conduct a harmonised population census in 2020 for the GCC region, in such a way that agreed datasets can be validly aggregated to the GCC level and consistent with the UN recommendations for the 2020 round of population censuses
2. Develop technical capacity of the GCC statistical system in this work

Each priority project has an approved roadmap, containing key dates. The key dates for the 2020 Census project include:

- Identify country level Census designs by Q2,2016
- Develop legislation changes by Q2,2016
- Complete development and testing programme across all countries by Q4,2019
- Complete Census data collection by Q4, 2020
- First release of Census statistics by Q4, 2021

2.2 Country Implementation Plans

Each priority project has also a Country Implementation Plan, based on the project roadmap. This identifies the Objectives, Milestones and Activities for GCC-Stat and member countries and so provides a clear view of what countries need to do to achieve the agreed milestones set out in the project roadmaps.

By the use of a standard framework, countries have a consistent way of linking the specific actions undertaken in individual countries with the harmonised activities to achieve the GCC statistical roadmap.

The objectives and standard sub-objectives of the CIP are summarized in Table 1. The full version of the Census CIP standard framework is in Appendix 1.

⁹ Information on all the GCC –Stat priority projects can be found at <http://gccstat.org/en/calendar/roadmap> and <http://gccstat.org/ar/calendar/roadmap>

Table 1 2020 Census Country Implementation Plan – Objectives and Sub-objectives¹⁰

Objectives/Activities
Prepare a detailed, specific Implementation Plan to achieve the agreed objectives/milestones
OBJECTIVE 2: Using administrative sources, conduct a harmonized population census in 2020 for the GCC region, in such a way that agreed datasets can be validly aggregated to the GCC level and consistent with the UN recommendations for the 2020 round of population censuses
2.1 Initial steps to conduct a harmonized 2020 population census, consistent with UN recommendations
2.2 Preparatory steps to conduct the 2020 population census using administrative registers
2.3 Detailed Preparation and Testing
2.4 Conduct all steps of the harmonized Census (including release of statistics)
2.5 GCC level aggregates to be prepared and released
2.6 Collaboration at the country, GCC and international levels
OBJECTIVE 3: Develop national capacities in this field of statistics
3.1 GCC-Stat to provide in-country technical assistance and training
3.2 GCC-Stat to provide regional training courses and workshops

Each country will then tailor the Country Implementation Plan, recognizing the country specific tasks required to achieve the project. In turn, these plans then form the basis for the Country specific Census plan.

The Country Implementation Plan framework is used in Section 4 to discuss specific Project Activities and tasks. Countries may find this section useful in preparing/finalizing Country Implementation Plans.

¹⁰ The standard CIP framework includes Objective 1 - Regular assembly and dissemination of statistics, including aggregate GCC-level. This objective relates to the regular (quarterly, annual) assembly and dissemination of statistics and does not apply to the 2020 Census.

Section 3 Project Management Concepts

3.1 Introduction

This section summarises the key principles of Project Management¹¹ Project management aims to use planning, budgeting, monitoring and controlling techniques and skills, to support the technical and operational activities and so ensure that the census project¹² meets its objectives.

Project management activities include

- Project planning, including budgeting and resource scheduling
- Monitoring and Controlling
- Risk Management
- Project Closure and evaluation

Project Planning is the identification and systematic sequencing and scheduling of all of the activities and tasks required to complete the project to the agreed requirements. However, the project plan does not exist in isolation. Funding and Resources are also needed. Accordingly, the project plan must be prepared in conjunction with the project budget (funds needed for the tasks in the project) and the resource schedule (when people and other resources are needed).

Project Monitoring is the collection, recording and reporting of information related to the progress or other aspects of the project. Controlling is using this information obtained during monitoring to help keep the project on track.

Uncertain, sudden or extreme events may occur in any project. Some of these events may have an impact on the success of the project. These risks and the actions that will be taken to reduce their likelihood or impact, form part of risk management. Risk management, including preparing the Project Risk Register is a key part of project management.

The information from the project plan, budget, resource schedule and risk register, may also be used in the business case. Business cases are integrated structured proposals intended to convince a decision maker to fund or approve the project.

Project management results in a set of project deliverables (i.e. project plan, budget, resource schedule, business case, risk register) that will be used throughout the project. While the focus may change during the project, the discipline of Project management aims to manage the scope (requirements), time, cost and quality, to ensure that the objectives are achieved.

3.2 Project Planning concepts

The following project management concepts are used in these guidelines

- Phases - groupings of **activities**. Will generally have one **owner** or occur over a fixed time period. Phases may be made up of **sub-phases**.
- Sub-phases are major groupings of activities.

¹¹ Useful Census specific resources include [Handbook on Census Management for Population and Housing Censuses](http://www.unece.org/stats/documents/2007.03.census.html#/) (Arabic, English) and UNECE Census Planning and Budgeting presentation 2007 (English) <http://www.unece.org/stats/documents/2007.03.census.html#/>

¹² See also the UN Principles and Recommendations for Population Census, Revision 3 <http://unstats.un.org/unsd/statcom/doc15/BG-Censuses.pdf> page 36

- Activities generally result in a **deliverable** used somewhere else in the project. Made up of **detailed tasks**.
- Tasks need to be accomplished within a *defined* period of time (**duration**) or by a deadline (**milestone**). **Dependencies** help determine the order in which the tasks are conducted
- Deliverable - an output/result that will be used somewhere else
- Milestones - specific points when key deliverables are expected or required
- Dependencies - relationships between tasks
- Owner - person accountable for a set of activities
- Gantt Chart – visual representation of a project (or sub-project) plan
- Risk Management – process of managing uncertain, sudden or extreme events that if they occur could impact on the success of the census

Any project is structured into Phases, Sub-phases, Activities and Tasks. Tasks represent the smallest set of work that needs to be done. Activities are groups of Tasks. Sub-phases are groups of activities, and are equivalent to the Deliverables shown in the Country Implementation Plan. Phases represent the highest level of the project organisation. Table 2 provides an example of these. Note that Tasks are not specified in the Country Implementation Plan, but are included in the project plan, as shown in the example in Appendix 4.

Table 2 Example of Census Project Structure

Project Plan	Project Plan Example		Country Implementation Plan		
	Level	WBS No	Title	CIP No	CIP Level
Phase		Preparation			
Sub phase	2.6	Preliminary Technical Preparation	Initial Technical Preparation	2.2	Deliverable
Activity	2.6.2	Identify and Assess possible Data Sources	All countries to assess feasibility of using administrative registers for 2020 Census	2.2.2	Activity
Task	2.6.2.1	Identify potential administrative sources			
Task	2.6.2.2	Access the Possible Register sources			
Task	2.6.2.3	Conduct detailed assessment of each potential source			

3.3 Preparing the Project Plan

Project planning is preparing the sequenced list of activities and tasks that need to be completed. This list of sequenced tasks is called a project plan or work plan.

Preparing the plan should be undertaken in a systematic manner, recognizing that many iterations will be needed before the plan is finalised. It is also important to take both a Top –down and Bottom-Up perspective in preparing the plan.

Top-down planning is the view from the top, and gives the high-level view. Bottom–up planning often provides the detail.

Start with Top-Down planning to identify the strategic drivers for the project. Identify the key requirements and constraints and the major phases of the project. Then plan for each phase, identifying tasks and activities, resources, schedule and dependencies. Use dependencies to link the phases to build up the project structure. This will result in a Top Down view. Figure 4 shows some planning techniques.

Figure 4 Project Planning Techniques

Understand the Environment

- Identify the strategic drivers and strategic direction. (These are the reasons for the project, including how it will contribute to the goals of the NSO and the country.) These will help determine the success factors and constraints.
- Identify the success factors – how the stakeholders will determine if the project is successful. These will help in making choices
- Identify the constraints. These set limits .These may be country specific, regional (e.g. harmonised dates) or international.

Structure the Plan

- Create a structure for the project. Identify the major phases, using a tool such as the Country Implementation Plan¹³
- Split any phases which are made up of large amounts of work or work conducted over a long period of time
- Ensure each sub-phase and phase has a clear owner.

Plan within Sub-phases (or phases as relevant)

- Identify any missing activities, relevant to the country and/or census design
- Identify all the tasks for each activity. Identify how long these tasks will take (**duration**) or the deadline (**milestone**).
- Create estimates of duration for each task. Duration is how long the task will take, given the proposed resources
- Identify interdependencies within each sub-project.

Link the Sub-Projects

- Identify the interdependencies between tasks. By using a project software tool, it will be possible to see the interdependencies between sub-phases.

Identify Owners and Resources

- As the plan is developed, owners can be identified. Owners are people accountable for a set of activities. Ensure there are clear owners for each phase and sub-phase
- Identify resources for tasks, as the plan is prepared. Where project management software is used, this will result in a resource schedule being automatically created. Otherwise, this schedule needs to be created manually as the plan is prepared.

Bottom-Up Review

The Bottom-Up review involves the detailed review – it is taking the plans from the lowest level and integrating them together. The Bottom –Up review can be used to fill in the gaps – but it also helps to see the linkages between parts of the project. Figure 5 shows some of the steps that can be used in conducting the Bottom-Up review.

¹³ THE GSBPM can also be used

Figure 5 Bottom-Up Review Steps

Review interdependency paths

- Identify the interdependencies between tasks. These set up pathways of tasks and relationships throughout the project.
- Review each of these pathways to see what is missing, and whether the relationships are sensible.

Review the timeline

- Check whether the schedule of tasks is consistent with key external dates and commitments.
- Check whether the estimate of time/resources for tasks is consistent with experience.

- **Review the resource schedule**

- Check the resource schedule. Are resource allocated to each task? Are the allocation of resources consistent with experiences?

3.3.1 Project Planning Helpful Hints

Before starting the Top-Down Plan

- Ensure that there are clear strategic objectives for the project. (This will require active engagement with senior management and key decision makers such as the Project Higher Level Committee.) The strategic objectives will help in determining the Project Success Factors – the indicators of success.
- Conduct the Administrative Census Pre-Conditions Assessment early, to help understand the current situation. SWOT analysis will also be helpful

Filling gaps in the Bottom-Up Review

- Use information from other countries/similar activities to identify initial estimates for new tasks
- Where planning of key sub-phases or activities involves assumptions, identify and schedule activities to refine the assumptions. This may include tasks such as designing a trial, measuring duration of effort, as well as updating the estimates.

Making Decisions

- Projects always require decisions and tradeoff. Use the success factors as the framework for making decisions. This helps keep focus on the key areas.

Using Project Management Software

- Software such as MS Project can help in preparing the plan, especially in scheduling and creating and reviewing dependencies, and assigning resources. However, both the strategic planning and high-level project planning requires analysis and assessment of assumptions and constraints.

Iterations

- The project plan will require many iterations, as conflicts are resolved or new information added.
- Allow for this in scheduling the preparation of the plan.

3.3.2 Project Interdependencies

These are the relationships between different tasks. For example,

- Once I finish Task A, what happens next?
- To start Task A, what do I need to complete?

- To finish Task A, what else needs to be finished?
- What needs to happen at the same time to allow Task B to start on time?

The scheduling of tasks (order) will be determined by the interdependencies between different tasks. Part of effective project planning is identifying the interdependencies. There are four main types of dependency relationship, as can be seen in Figure 6.

Figure 6 Dependency Relationships

Dependency Relationship	Description	Example
Finish- Start (FS)	Task B can't start until Task A is finished	Assessing Quality of Sources requires a Quality Framework
Finish – Finish (FF)	Task B can't finish until A is finished	Creating Address Register can't finish until all source data is received and checked
Start –Start (SS)	Task B can start once Task A starts	Checking of individual sources can start once sources start to be received
Parallel – No relationships	No Relationships	Identifying Data Basket Items can be done at the same time as reviewing the Statistics Law

3.3.3 Project Management Software

Project Plans for complex projects such as a Census are usually prepared using project management software. This helps in developing the project structure. Depending on the sophistication of the software, it can manage planning (including estimations of duration), scheduling, budget management, and resource allocation.

For many project managers, one of the values of project management software is the ability to map out a project's tasks and visually display how they interconnect. This provides a powerful way to define the project schedule, understand the critical path for a project, and assess and allocate staff resources. This visual display through tools such as GANTT charts can help the project manager easily understand progress and relationships.

3.4 Budgets for Administrative Based Censuses

Project Budgets identify in a standard format the required funding for the project. As part of this format, the budget will also identify the financial years, and the relevant financial code structure.

Preparing the budget should be done in conjunction with the project plan

The main areas of costs for register censuses¹⁴ are:-

- People Resources to :
 - design and build the statistical registers. (May be Current staff, Temporary office staff or Consultants/Contractors.)
 - maintain the statistical registers
 - Prepare, build and maintain the IT systems needed throughout the census cycle

¹⁴ Appendix 3 contains information on the costs of many European countries who conducted administrative register censuses in the 2010 round.

- review and if necessary, amend legislation
 - Effectively manage the project
- IT database systems and hardware - including
 - data management and storage,
 - data transfer infrastructure
- Pilots to validate the census design and/or validate or update sources.
- Processing (coding and editing) the final data
 - Analysing the final results (May be Current staff, Temporary office staff or Consultants/Contractors.)
- Disseminating the final results – using paper/web/database products
- Surveys or studies to evaluate the data (e.g. Post Enumeration Studies)
- Contingency Plans

Where a country decides to conduct a combined census, involving both fieldwork and Register census component, there will be fieldwork costs. Therefore, before finalizing budget proposals, it is critical to determine the High Level Design – specifically the planned mix of Administrative and Fieldwork; in particular the fieldwork sample design.

It is vital to work with the Finance Department in the NSO in preparing the census budget. It is also common to work with the relevant Department of Finance in finalising the budget. Census projects are often large and have an unusual distribution across the financial years.

It is important that the Census Budget always:

- Is prepared well in advance
- Covers all known activities
- Includes allowance for contingency (covering risks, as well as for uncertain or unknown estimates)
- Allocates sufficient resources to all census phases – including dissemination, planning and preparation, as well as collection/collation, building IT systems, etc

Funds allocated and used effectively on planning and preparation will result in savings in other phases.

It is also important to identify the approval process, and build the key deadlines into the project plan.

3.5 Resource Scheduling

People are critical to the success of any census project. It is critical that all people and any other resources are identified and appropriately scheduled. Resource Schedules can be prepared using project management software such as MS Project. (An alternative, but not recommended for a complex project such as an Administrative Census, is to prepare the resource schedule using a tool such as Excel.)

This will result in a schedule or list of people showing what tasks and activities are assigned to them for each period (usually week or month) of the census project.

Three main aspects need to be managed in scheduling resources.

- Checking that resources are allocated to each task
- Checking the resources are not over-allocated
- Checking that the resources required are available when you need them

3.6 Monitoring and Controlling

Monitoring refers to the collection, recording and reporting of information related to the progress or other aspects of the project. Controlling is using information obtained during monitoring to help keep the project on track. Another important aspect of Controlling is effective Change Management Processes and Systems.

Monitoring

This is comprised of two separate but related activities

- Assessing – Gathering the necessary information – for project tasks, budgets and use of resources
- Measuring – Using the information to measure progress

It is important to identify:-

- **What** will be monitored,
Identify a set of KPIs related to the project success criteria. In addition, identify special aspects of the project that need to be tightly controlled. These include areas of high risk, identified in the risk register and activities which were uncertain during the planning stage.
- Monitoring schedule (**When**),
Regular monitoring should be conducted at least monthly. High-risk activities should be monitored on a weekly or at times daily basis.
- **How** the monitoring will be done, and,
- **Who** will undertake the monitoring.

Budget Monitoring

Monitoring the budget is fundamental. It enables the identification of over-expenditure and shortfalls and allows time to take appropriate actions.

There are two levels of budget monitoring,

1. Monthly - Review expenditures against the allocated funding for each sub-project
2. Annually–Monitor the **total yearly expenditure** against the estimates of expenditure for all years of the census cycle prepared in advance

Monthly monitoring identifies immediate issues. Annual monitoring identifies structural issues across the total project.

Measuring/Analysing Progress

The information collected during monitoring (whether tasks/activities, quality or budget monitoring), should then be analysed to measure progress. It is important to take a forward-looking perspective, while keeping a clear view of what has happened to date.

Accordingly, it is important to have the right set of measures, as they will provide the information to be used in controlling the project. Focus on what will be useful, rather than what is easy to measure. Figure 7 illustrates some examples of Progress Measures.

Figure 7 Progress Measures

Easy to calculate – but Not so good	Better – but might be harder to calculate
Percent of budget actually spent	Ratio of Cost Spent to Cost Budgeted Estimate of % Budget required to complete Activity
Number of Milestones met	Estimate of % Activity left to complete (compared to Timeline) % of Milestones meeting original dates
Number of Errors corrected in Register Sources to date	% of Datasets cleaned % of Datasets now Error free
Number of IT System Bugs fixed to date	% of Systems completed User Acceptance Testing

As the figure shows, the Measures that are easy to calculate reflect the past activities and tasks. However, to effectively control the project, it is necessary to focus on the future – the tasks or activities that still need to happen.

Controlling

Project Controlling is ultimately about delivering the project to the agreed scope, cost, time and quality considerations, while managing risks and challenges. These challenges include:

- Scope Changes – formal agreed changes to the Scope of the project
- Scope Creep – Small changes that necessitate other changes, which lead to still more changes ... and so on
- Poor planning – perhaps due to incorrect assumptions
- Missed deadlines
- Changes in Requirements
- Changes in Resources
- Changes in Budgets

The most common problem is Scope Creep – the small changes that necessitate other changes.¹⁵

Scope Creep may be a symptom of unclear requirements, or poor planning or unclear requirements. In all cases, it needs to be properly managed. The solution is effective Change Control. While Change Control can be seen as an IT process, it is more properly a tool to manage change in projects.

Change Control

The main purposes of change control are to ensure that

- no unnecessary changes are made,
- all changes are documented,
- services are not unnecessarily disrupted and,
- resources (funding, people, and equipment) are used efficiently.

¹⁵ <http://www.businessdictionary.com/definition/scope-creep.html#ixzz3tcb2xKPs>

The process of change control includes

- Determining the decision process for different changes
- Identify the impacts for each requested changes (Impact Assessment)
- Making recommendations
- Deciding whether changes are approved or not – i.e. the Decision making
- Communicating the changes
- Documenting the changes
- Implementing the Changes
- Updating Plan and Risk Register

It is important that all the steps are followed, and that there are clear accountabilities for making the decisions on the different types of changes. The process should be applied to all types of requested changes. It is critical that the impact assessment be conducted thoroughly to avoid unintended impacts. Consider also the impact on the risks identified in the risk register.

Reporting

Proper Reporting is critical for any project. In the case of the Administrative-Register Census project, reporting needs to be seen as not just an internal NSO activity. Progress reporting is important to help enhance the working relationships with agencies providing data.

Effective reporting also helps in communication and coordination for those working on different activities/tasks. It also helps maintain visibility of the project, and keeps the project team motivated. It is important to remember the needs of different audiences. Not everyone needs to receive the same information, or in the same way

Audiences

The following are likely to be audiences for reporting.

- Board/Higher level Committee
- Government Stakeholders
- Senior Management
- Project Team
- Specialist Audiences, e.g. GCC-Stat – Harmonised Activities

Not everyone needs to know or receive the same information. The more senior the audience, the less detail is required. Use graphical tools such as Dashboards to present information. It is also important to link Census reporting into the wider NSO reporting systems.

Finally- while reporting during a project provides much needed reporting on progress, including delays, it is important not to forget the GOOD NEWS.

3.7 Risk Management

Risks are the uncertain events or conditions, which if they occur will have a negative outcome on achieving the project success. Risks have a cause (also known as a trigger), as well as a chance or likelihood of happening, and consequences or impacts on the project.¹⁶

¹⁶ See UNESCO Risk Management Manual 2007, <http://unesdoc.unesco.org/images/0019/001906/190604E.pdf>

Management of risks is a multistage process, involving the identification, understanding and assessing, managing, monitoring and if necessary responding to the risk situation. The focus is on those possible events that place the project at risk from achieving the project success factors.

While everyone involved in the project has a role in identifying risks, it is important as part of the risk management process to clearly assign risks to specific people. These people will be responsible for preparing mitigation and management strategies.

3.7.1 Identifying Risks

Risk Identification is an iterative process. It is important to help identify

- Internal risks – risks which are under the control or influence of the project
- External risks – risks which are beyond the control or influence of the project

. Risks can arise in many different parts of the project, including

- Project Organisations
- Requirements
- Methods
- IT Systems and Infrastructure
- Resources and Skills
- Data Sources
- Government and Political Support
- Legal Environment

The information is brought together to create a Project Risk Register and Project Risk Management Plan. Systematically identify all possible risks.¹⁷ Risks should be mapped onto the Risk Register and the likelihood and impact assessed. A Risk Register template is shown in Figure 8.

Figure 8 Risk Register template

No	Risks	Likelihood (H/M/L)	Impact (H/M/L)	Mitigation Plan
Likelihood – chance of the risk happening Impact – consequence Mitigation Plan – actions to reduce the likelihood or impact of the risk				

3.7.2 Risk Assessment and Understanding

Not all risks are equal. Some will have a high likelihood of happening. Some risks will have a high impact. Others will have a low impact. In assessing risks, it is useful to map them against a likelihood-impact matrix as shown in Figure 9.

¹⁷ Possible ways to identify risks include - Previous experiences, Published/shared information, SWOT analysis, Brainstorming, Project planning. A model for identifying all types of risk is the Risk Doomsday Clock in http://leadinganswers.typepad.com/leading_answers/2012/06/collaborative-games-for-risk-management.html,

Figure 9 Risk Likelihood-Impact Matrix

Likelihood of Risks	High			
	Medium			
	Low			
		Low	Medium	High
		Impact on Success Criteria		

The likelihood-impact profile will change over time. Information from this assessment can then be used to focus effort. Risks assessed as Medium-High Likelihood and Medium-High Impact will have risk management plans prepared, showing the actions to reduce the likelihood or impact of the risks occurring. Some risks that are low impact / low likelihood will have a mitigation strategy of “Do Nothing” or “Monitor risks.”

An example of a Risk Mitigation plan for aspects of an Administrative Register Census is shown in Figure 10.

Figure 10 Example of Risk Mitigation Plan for Administrative Register Census

Risk	Likelihood	Impact	Mitigation Strategy/Plan
Lack of support from Agencies/Ministries	Medium	High	Establish committee. Work with agencies/ministries on benefits.
Some Data Sources can't be accessed	High	High	Escalate to higher levels Identify possible other sources.
Quality of Data Sources Unknown	High	Medium	Assess quality using Quality Framework
Key Register sources not available for 2020	Medium	High	Identify alternatives. Prepare Plan B - Conduct Combined Census, using 2020 Census to help build registers
Not enough Resources	Medium	High	Second people from other agencies

3.7.3 Responding to Risks

Sometime, despite the mitigations put in place, risks may still occur. Accordingly, it is important to prepare Risk Management plans. These plans will set out the steps to respond, if the risks eventuate, as well as how to get back to 'normal'.

Risk Management Plans give a plan to follow, if a risk occurs. They are typically prepared for the risks assessed as High Impact/High Likelihood and should be prepared as early as possible. Additional costs that are needed to implement the Risk Management Plan should be included in the budget. An example of a Risk Management Plan is shown in Figure 11 below.

Figure 11 Example of Risk Management Plans for Administrative Register Census

Possible Risks	Likelihood	Impact	Management Plan
Some key Data Sources are poor quality	Medium-High	High	Work with suppliers to improve quality. Identify alternative sources Prepare and implement Plan B
Some Data Sources can't be accessed	High	High	Escalate to higher levels Identify possible other sources.
Results from Administrative Census not consistent with previous Census results	High	Medium-High	Fully evaluate the statistics Run user workshop.

3.7.4. Monitoring Risks

Risks should be actively monitored. Formal reviews of the Risk Register should be conducted on a regular (e.g. quarterly basis). Where the project includes outsourcing, regular reviews of the contracts should also be conducted.

3.8 Project Closure

Projects are temporary, meaning they have specific end dates for completion. Without a formal closure process, projects can drag on, and equally importantly, there is not an opportunity for the organisation to learn from the project.

Closing a project is not as easy as it seems. Firstly, it is necessary to ensure that the project closure criteria have been fully satisfied and that there are no outstanding items remaining. It is also necessary to archive the data, complete documentation, release resources, complete arrangements with supplier contracts, communicate with stakeholders, review the project and celebrate the completion of the project.

The standard Project Closure Actions are:

- **Archive the data**
Archiving of the statistical data, as per agreed procedures. (See also section 4.8.7)
- **Complete and archive documentation**
Ensure that the project documentation is completed and archived. See also section 4.8.7
- **Release/reassign Resources**
Reassign or release staff members and other resources to other projects or duties.
- **Complete arrangements with suppliers and vendors**
Review performance of suppliers and vendors. Review each contract and determine if the decision to outsource was justified and if the contract worked successfully. Complete specific closure processes for contracts.
- **Communicate with stakeholders**
As part of the closure process, it is important to inform all project stakeholders that the project is now closed. Stakeholders should be advised/reminded how to access statistics, using the products and services produced in the project. They should also be kept informed of future developments. (Section 4.9 provides more information on stakeholder management.)
- **Post Implementation Review/Lessons Learned**
Conduct a review to identify the lessons that can be learnt. This helps determine whether the project delivered the strategic objectives, including meeting client requirements and remaining

within scope and budget. It will also help to determine whether the project conformed to the project management processes. The process is not to find blame, but to learn.

Given the size and duration of the census project, it may be sensible to conduct post implementation reviews at the end of each phase. It is also good practice to conduct an overall review, bringing together the key points from each of the reviews of the separate phases.

- **Reporting**

Separate reports should be provided to Stakeholders, Advisory Committees and Senior Management. An overall administrative and methodological report containing information on the manner in which the census was planned, organized and conducted of the census should also be prepared. See also 4.8.7.

- **Project Celebration**

It is important to commemorate the end of the project. The end of a major project, such as the census, is often a time to reflect. Project team members and stakeholders have typically invested a great deal of time and emotional energy into the success of the project.

Section 4 Planning the Administrative Register Based Census

4.1 Overview

This section describes the standard technical steps in initiating and conducting an Administrative Census. Depending on the country situation, some of these technical steps may not be necessary. Countries therefore need to identify their current situation and identify (and then schedule) all the specific tasks. Risks will also need to be managed. This may require additional tasks.

The activities and tasks for an Administrative Register Census are not linear and many happen in parallel. Others will need to happen in order. Detailed analysis will be needed to identify dependencies between the tasks.

In practice, the detailed plan will be built up over time. Technical work (e.g. understanding the administrative sources) needs to be conducted before completing the design of how the census will work. In turn, without a clear understanding of the design, it will not be possible to identify and schedule all the tasks and therefore prepare the plan.

These steps are presented within the framework of the Country Implementation Plan (CIP) introduced in Section 2. The detailed activities and tasks are presented in Sections 4.3 – 4.9, following the sequence of the Country Implementation Plan.

The detailed planning and scheduling will be carried out using the Project Management principles and frameworks discussed in Section 3.

4.2 Using the Census Country Implementation Plan planning framework

As noted in section 2.2 above, the Census Country Implementation Plan (CIP) has two objectives¹⁸

- OBJECTIVE 2: Using administrative sources, conduct a harmonized population census in 2020 for the GCC region, in such a way that agreed datasets can be validly aggregated to the GCC level and consistent with the UN recommendations for the 2020 Population and Housing census round
- OBJECTIVE 3: Develop national capacities in this field of statistics

Objective 2 is the framework for describing the activities and tasks required for an administrative based census. It is also supported by the project management activities (planning, monitoring and reporting) which are conducted throughout the project.

The country specific sub-objectives and main deliverables for Objective 2 are shown in Table 3. This then forms the planning framework. The green rows represent the major milestones for deliverables from countries and the rows in pink are the sub-objectives.¹⁹

¹⁸ The standard CIP template has three objectives. Objective 1 - the regular dissemination of statistics, does not apply to the Census project.

¹⁹ GCC-Stat deliverables are excluded from this table, but are shown in the full Country Implementation Plan in Appendix 1.

Table 3 2020 Census Country Implementation Plan – Country specific Activities and Deliverables for the Harmonised Register based 2020 Census

CIP Number	Census CIP Objectives/Deliverables	End Date
	Prepare a detailed, specific Implementation Plan to achieve the agreed objectives/milestones	
	OBJECTIVE 2: Using administrative sources, conduct a harmonized population census in 2020 for the GCC region, in such a way that agreed datasets can be validly aggregated to the GCC level and consistent with the UN recommendations for the 2020 Population and Housing census round	
2.1	Initial steps to conduct a harmonized 2020 population census, consistent with UN recommendations	
2.1.1	All countries confirm intention to conduct harmonised Census in 2020	Q2, 2017
2.1.2	Agreement on adoption of 2020 UN Recommendations and standards in GCC countries	Q2, 2017
2.1.3	All countries to finalise GCC Harmonised Data Basket	Q2, 2017
2.1.4	All countries to agree on the common 'Census date'	Q4, 2017
2.1.5	All countries to finalize scope of country specific Census (including country specific data items)	Q4, 2017
2.1.6	All countries to agree budgets and approvals for the 2020 Census	Q4, 2017
2.2	Preparatory steps to conduct the 2020 population census using administrative registers	
2.2.2	All countries to assess feasibility of using administrative registers for 2020 Census	
2.2.4	All countries to develop legislation changes (as needed)	Q4, 2017
2.2.5	Countries to identify country level Census designs (mix of administrative and fieldwork) and supporting methods and systems	Q4, 2017
2.3	Detailed Preparation and Testing	
2.3.2	All countries using administrative data to complete detailed data quality assessments	Q4, 2018
2.3.4	All countries have implemented their testing programme	Q4, 2019
2.3.6	All countries to prepare IT systems, databases and infrastructure	Q4, 2019
2.3.7	All countries have finalised all operational preparations	Q4, 2019
2.3.9	All countries have determined how to evaluate the census results and census project based on the guidelines	Q4, 2019
2.4	Conduct all steps of the harmonized Census (including first release of statistics)	
2.4.1	All countries to complete Census data collection	Q1, 2020
2.4.2	All countries to complete all processing of 2020 Census data	Q3, 2020
2.4.3	All countries to complete full analysis of 2020 Census data	Q2, 2021
2.4.4	All countries to complete the first release of Census statistics	Q4, 2020

2.4.5	All countries to complete dissemination of all data	Q4, 2021
2.4.6	All countries to complete the evaluation of the census results and project	Q4, 2022
2.4.7	All countries have completed the census project, including archiving of documentation	Q4, 2022
2.5	GCC level aggregates to be prepared and released	
2.5.1	Agreement on data to be aggregated at GCC level	
2.6	Collaboration at the country, GCC and international levels	
2.6.1	NSCs to take steps to strengthen collaboration at country levels	
2.6.2	All countries to determine stakeholders for 2020 Census and confirm information needs	

The end dates reflect the final quarter that these objectives need to be completed by, in order to deliver the GCC Harmonised Census Roadmap.

The activities and tasks required for each objective are shown in sections 4.3 – 4.9. Each Objective/Deliverable in the Country Implementation Plan is set out in a separate section. These sections are organised in a standard manner. The CIP Objective/Deliverable is shown, and then the Activities/Tasks are listed, for each of the Objectives. Where appropriate, the relevant CIP number is also referenced. The End Dates shown in the relevant tables are from the Country Implementation Plan.

Where necessary, detailed descriptions of the Activities and Tasks are also provided.

4.3 Planning and Monitoring

4.3.1 Planning and Monitoring Objectives/Deliverables

Planning and Monitoring underpin the technical activities. However, they also need to be scheduled. The Country Implementation Plan therefore has a specific deliverable relating to the preparation of the Plan.

Table 4 below shows the Planning and Monitoring Objectives.

Table 4 Planning and Monitoring Objectives/Deliverables

CIP Number	CIP Objectives/Deliverables	End Date
	Prepare a detailed, specific Implementation Plan to achieve the agreed objectives/milestones	
2.1.6	All countries to agree budgets and approvals for the 2020 Census	Q4, 2017

4.3.2 Planning and Monitoring Activities and Tasks

The tasks related to preparing the specific Implementation Plan are shown in Table 5. These planning activities and tasks follow the same framework described in section 3. (Some statistical activities related to Archiving, Documentation and Stakeholder Management are described in sections 4.8 and 4.9.)

Table 5 Administrative Census Planning and Monitoring Activities and Tasks

CIP No	CIP Objective	Activity	Tasks	End Date
	Prepare a detailed, specific Implementation Plan to achieve the agreed objectives/milestones	Strategic Planning	Identify the Strategic Objectives/ Goals	
			Identify the constraints	
			Determine the Success Factors	
			SWOT analysis	
			Determine approach to outsourcing	
		Project Governance and Organisation	Establish Project Governance	
			Determine resources (people) needed	
			Set up organisational structure and appoint people	
		Initial Project Planning	Preliminary Planning	
			Initial Risk Assessment	
			Prepare High level budget	
			Prepare Business Case	
		Detailed Planning	Prepare Detailed Plan	
		Project Monitoring and Controlling	Design monitoring processes and procedures	
			Implement monitoring procedures	
			Set up and implement project change control processes	
			Set up and implement risk management processes	
			Prepare reporting templates	
			Provide regular reports	
		Project Closure	Archive the data	
			Complete documentation	
			Release resources	
			Complete arrangements with supplier contracts	
			Communicate with stakeholders	
			Review the project	
			Celebrate the completion of the project.	
2.1.6		All countries to agree budgets and approvals for the 2020 Census	Budgets	Prepare detailed budget
	Prepare resource reschedule. Identify if extra people needed			
	Request budget			
	Agreement on 2020 Census budget			
	Approvals		Prepare approvals (e.g. decrees) as required	
			Issue approvals and decrees as needed	

Note The End Date is the End Date for the Objective, as shown in the Country Implementation Plan. The detailed planning process will enable NSOs to complete the End dates for the other Activities and Tasks.

Planning and Monitoring Activity/Task Descriptions

Note: In general, these Activities and Tasks follow the discussion in Section 3. Only specific considerations related to Censuses, in particular Administrative Censuses, are noted here.

Strategic Planning

In identifying the strategic goals for the census project, and in particular the use of administrative data, it is important to take a wide view. The use of data from administrative registers is particularly effective in NSOs where data from registers are used continuously and consistently in various surveys and other data collection activities. However, moving from a survey/census based NSO to an administrative data based NSO is expensive and needs to be planned in a coordinated manner.

The Census plan should only directly address the tasks related to the Census project; however, it is also important to show explicitly the strategic interdependencies. These might for example include strategic decisions on the long-term role of administrative data, completing tests/trials on use of administrative data in other statistical outputs.

It is also useful at this point to consider the strategic direction for outsourcing.

There will be a strong relationship with Stakeholder Management described in section 4.9

Project Governance and Organisation

Project Governance may include the Higher Level committee, as well as internal Project Steering Committee(s). The final project Organisation will be dependent on the strategic goals, overall design (i.e. mixture of register and fieldwork collection) and specific organisational requirements.

Initial Project Planning

The initial plan helps identify the major phases of work, key deadlines and high-level budget and is the basis for more detailed planning, budgeting and resource scheduling. This will also include an initial assessment of the risks and how they will be managed.

The planning information, together with budget and strategic objectives may be brought together to form a business case. Some countries may need business cases to support budget proposals and/or political support.

It may also be necessary for those countries moving from fieldwork to administrative censuses to carry out some initial planning in parallel with initial technical preparation. For example, it is necessary to assess what pre-conditions are in place for a register-based census, before completing the initial planning.

Detailed Planning

This refers to the preparation of the detailed plan. Agreement on the high-level budget is required before the detailed plan can be completed.

Project Monitoring and Controlling

Establishing and implementing the agreed formal project monitoring and reporting processes. This will continue throughout the project. Specific monitoring and controlling tasks should be included in the plan.

Project Closure

These tasks, described in section 2.8, complete the project. Some of these tasks also overlap with the technical activities and tasks, necessary to complete the project described in section 4.8.8 below.

Project budgets

Preparation of the detailed budget and resource schedules.

Approvals

This includes formal approval for the project, and the associated decrees.

4.4 Initial Preparation

4.4.1 Initial Preparation Objectives/Deliverables

Preparation covers a wide range of critical technical activities, which in turn affect strategic decisions. The focus of the initial steps is on those elements that will determine the direction of the project. Decisions made at this stage, e.g. on the expected mix of registers and fieldwork will determine the detailed work needed later in the project. The objectives are shown in Table 6

Table 6 Initial Preparation Objectives/Deliverables

CIP Number	CIP Objectives/Deliverables	End Date
2.1	Initial steps to conduct a harmonized 2020 population census, consistent with UN recommendations	
2.1.1	All countries confirm intention to conduct harmonised Census in 2020	Q4, 2016
2.1.2	Agreement on adoption of 2020 UN Recommendations and standards in GCC countries	Q4, 2016
2.1.3	All countries to finalise GCC Harmonised Data Basket	Q2, 2017
2.1.4	All countries to agree on the common 'Census date'	Q4, 2017
2.1.5	All countries to finalize scope of country specific Census (including country specific data items) s	Q4, 2017

4.4.2 Initial Preparation Activities and Tasks

The main activities and tasks are shown in Table 7. Countries may also have additional country specific tasks to support these activities. These initial preparation activities need to take place in conjunction with many of the planning and monitoring activities described in section 4.3.

Table 7 Initial Preparation Activities and Tasks

CIP No	Objective	Activity	Tasks	End Date		
2.1.1	All countries confirm intention to conduct harmonised Census in 2020			Q4, 2016		
				Scope of Harmonisation	Determine country view on harmonisation	
					Agree on scope of harmonisation for 2020 round across GCC countries	
				Country Intentions for 2020	Determine Country intention to conduct harmonised 2020 Census	
					Confirm commitment to conduct harmonised GCC Census	
2.1.2	Agreement on adoption of 2020 UN Recommendations and standards in GCC countries	Adoption of UN Recommendations		Q4, 2016		
				Agree within country on adoption of 2020 UN Recommendations and Guidelines (Revision 3)		
				Agree on adoption of 2020 UN Recommendations and standards across GCC countries		
2.1.3	All countries to finalise GCC Harmonised data basket	Harmonised Data Basket		Q4, 2017		
				Determine if proposed data basket meets country requirements		
				Confirm at Census Committee Meeting		
				Confirm through higher level GCC Governance groups		
				Implement Harmonised Data Basket		
2.1.4	All countries to agree on the common 'Census date'	Harmonised Census Date		Q4, 2017		
				Determine if proposed common 'Census date' meets country requirements		
				Confirm at Census Committee Meeting		
				Confirm through higher level GCC Governance groups		
				Implement common 'Census date'		
2.1.5	All countries to finalize scope of country specific Census (including country specific data items)	Scope of Census		Q4, 2017		
				Identify User requirements for the 2020 Census.		
				Determine what user requirements will be met from the harmonised basket and where there are any gaps		
				Identify country specific topics required in the census		
				Identify additional data items, specific to the country.		
				Determine subject population (target community) for the country specific topics		
				Determine classifications to be used for country specific data items		
				Determine reference periods for country specific data items		
	Determine whether the country census project will include a Census of Establishments					

Initial Preparation Activity/Task Descriptions

All countries confirm intention to conduct harmonised Census in 2020

Agreement on what parts of the census will be common across the GCC and what will be country specific. Confirmation of all countries to conduct harmonised census in 2020.

Agreement on adoption of 2020 UN Recommendations and standards in GCC countries

This includes the agreement on how the UN 2020 standards for Population and Housing Censuses will be implemented in the GCC 2020 round .

All countries to finalise GCC harmonised data basket for the 2020 Census

Agreement on common GCC data basket of items, including concepts, definitions and classifications.

All countries to agree on the common 'Census date'

Agreement on common reference date. This includes reviews within countries, as well as agreement at the GCC level.

All countries to finalize scope of country specific Census (including country specific data items)

Agree on what will be included in the country census project. The first step is to identify what users require from the census, and how these needs can be met from the harmonised basket. Other requirements will need to be met from country specific topics. These additional topics will need to have definitions, classifications, and reference periods identified.

Countries that have traditionally conducted a Census of Establishments as part of the census project will need to determine whether to include this as part of the census project. (It is not part of the harmonised 2020 Census project).

4.5 Preliminary Technical Preparation

4.5.1 Preliminary Technical Preparation Objectives/Deliverables

All censuses require a range of technical preparations, as shown in Table 8. The objective is to determine the census design (mixture of administrative and fieldwork). This requires investigation of administrative sources, as well as meeting other pre-conditions, such as legislation changes.

Table 8 Preliminary Technical Preparation Objectives/Deliverables

CIP Number	CIP Objectives/Deliverables	End Date
2.2	Preparatory steps to conduct the 2020 population census using administrative registers	
2.2.2	All countries to assess feasibility of using administrative registers for 2020 Census	
2.2.4	All countries to develop legislation changes (as needed)	
2.2.5	Countries to identify country level Census designs (mix of administrative and fieldwork) and support methods and systems	

4.5.2 Initial Preparation Activities and Tasks

Some of the activities to meet this objective are common across all methods – for example finalizing the data basket items, agreeing on what outputs (including indicators) will be published. Others are specific to the methodology.

The focus here is on the technical preparations, as shown in Table 9. Countries may also have additional country specific tasks, including other activities to meet the pre-conditions for an administrative census.

Notes:

The following GCC-Stat activities set out in the full Census Implementation Plan may be used by NSOs to complete some of the other activities.

CIP Number 2.2.1 – Pre-Conditions for an Administrative Register Census, published in late 2015,

CIP Number 2.2.3 -Guidelines on Planning Administrative Censuses²⁰

(These activities are also shown in the Country Implementation Plan in Appendix 1.).

²⁰ This publication.

Table 9 Initial Technical Preparation Activities and Tasks

CIP No	Objective	Activities	Tasks	End Date
2.2.2	All countries to assess feasibility of using administrative registers for 2020 Census			Q4, 2017
		Pre-Conditions Assessment	Assess if the Pre-Conditions are in place for an Administrative Census	
			Determine how gaps in Pre-Conditions assessment will be filled	
			Fill any gaps identified in Pre-Conditions assessment	
		Identify and Assess possible Data Sources	Identify potential administrative sources	
			Access the Possible Register sources	
			Conduct detailed assessment of each potential source	
			Identify how the statistical registers could be formed	
			Identify the likely sources to be used to create the statistical Population Register	
			Identify the likely sources to be used to create the statistical Address Register	
			Identify the sources to be used for Data Basket Items	
			Map data basket items to Potential Sources	
			Identify with agencies and Government changes needed to improve the quality or access to administrative records	
2.2.4	All countries to develop legislation changes (as needed)			
		Legislation	Identify where changes to legislation are required	
			If changes are needed, prepare new or changed legislation	
			Work across government to have new or changed law introduced and implemented	
		SLAs and MOUs	Identify entities for SLAs and MOUs	
			Prepare and sign SLAs/MOUs	
2.2.5	Countries to identify country level Census designs (mix of administrative and fieldwork) and support methods and systems			Q4,2017
		Quality frameworks	Identify the approach to quality to be used in the census	
			Confirm the quality methods and frameworks to be used in the census	
			Prepare Operating Guidelines	

CIP No	Objective	Activities	Tasks	End Date
		Initial Design	Prepare Initial List of Topics or parts of populations to be collected using Fieldwork or from other survey sources	
			Create Initial Census Design showing how the administrative census might work	
		Usual Residence Methodology	Determine how Usual Residence Collection Methodology will be implemented	
		GIS Requirements	Identify the Geospatial framework	
			Determine the Input Geography – smallest geography for collection	
			Identify mapping requirements for any fieldwork	
			Determine the Output Geography – geography levels for outputs	
		Data Manipulation Methods	Prepare Matching and Linking Methodologies	
			Prepare Prioritisation rules	
			Prepare Methodologies for managing Non-response (including missing values)	
			Agree on the overall use of IT in the census project.	
			Create Initial set of IT requirements	
		IT Requirements	Determine the overall IT systems and processes required in the census	
			Confirm outsourcing requirements and determine suppliers/partners.	
			Determine Infrastructure Requirements	
		Processing Design	Design Processing, including Validation	
		Analysis Design	Determine Analysis methods and processes	
		Dissemination Design	Prepare High Level Design showing what will be disseminated, and the main Dissemination methods.	
		Metadata	Identify Metadata Requirements for all census phases	
			Determine how the metadata will be prepared and stored	

Initial Technical Preparation Activity/Task Descriptions

Pre-Conditions Assessment

An initial task is to identifying what pre-conditions are in place in the country to conduct a register-based census²¹ and what needs to be done to have all the Pre- Conditions in place.

Identify and assess Possible Data Sources

Identify and assess the sources for base registers (i.e. the sources needed to create Population and Housing Registers), as well as the specialist registers needed to provide information about characteristics.

Legislation

Some countries may need to change legislation. This may include the statistical legislation as well as legislation in administrative agencies.

SLAs and MOUs

It may be necessary to establish formal Service Level Agreements (SLAs) or Memorandums of Understanding (MOUs) with agencies, concerning the supply of data.

Quality Frameworks

Determine the overall approach (i.e. mix of Quality Assurance and Quality Control). Determine how the quality methods and frameworks will be applied. Prepare operating guidelines. (These will be necessary in evaluating sources.)

Initial Design.

The technical activities to determine how the census collection will work, including the role of Administrative and Fieldwork data.

GIS Requirements

Determine the GIS requirements. This includes determining how the appropriate geospatial hierarchy for outputs (e.g. province, district, locality levels), identifying the input geography (the lowest level of geography for collection – e.g. enumeration areas, GPS code) and mapping requirements if fieldwork is required. The output GIS requirements are also linked to the Dissemination requirements, as decisions on products and services will determine GIS requirements. (See also section 4.8.5)

Usual Residence Methodology

Determining how the Usual Residence Approach will be implemented in Registers and any fieldwork.

Data Manipulation Methods

The statistical methods and techniques to transform the data from administrative registers into statistical registers. This includes for example how register sources will be matched and linked, rules for deciding when to use one source over another (prioritisation rules) and methods for dealing with missing data.

IT requirements

This includes determining the overall IT requirements, including the different systems that will be needed throughout all the phases of the census.

Processing Design

²¹ The GCC-Stat Pre-conditions tool (<http://gccstat.org/en/elibrary/publications/gccstat/item/gcc-pre-conditions-for-an-administrative-census-in-gcc-countries>) should be used

An important initial preparation task is to prepare an initial design of how the data will be processed (coded/edited/validated). This sets requirements for IT systems. It may also determine some requirements for extra data to be collected/collated from administrative registers. (See Section 4.8.3 for the detailed Processing preparation and implementation tasks)

Analysis Design

Analysis refers to how the final statistics will be assessed and understood. An initial design is important in preparing system and resource requirements. (See Section 4.8.4 for the detailed Analysis tasks)

Dissemination Design

The goal of any census is to disseminate quality statistics. It is important early in the project to prepare a high-level view of what statistics will be disseminated and what products and services will be provided. This will inform the initial project design.

Metadata

Metadata (information about the data) is key to understanding the final statistics and is pivotal to making decisions about the different administrative sources. It is necessary to determine the metadata requirements throughout all phases of the census, and to determine how the metadata will be prepared and stored.

4.6 Detailed Preparation and Testing – Administrative Census

This section describes the detailed technical preparation and testing for Administrative Censuses or the Administrative Census components of Combined Censuses. The detailed technical preparation activities for Fieldwork Censuses (including the Fieldwork component of Combined Censuses) is discussed in section 4.7.

4.6.1 Detailed Technical Preparation and Testing – Administrative Census - Objectives/Deliverables

The objective of this phase of the project is to complete the detailed technical work, to be ready to implement the administrative census or administrative components of the combined census. At the end of this phase, the administrative register sources will be clear; the detailed statistical methodology will be in place, along with the IT systems and databases. The approach for evaluating the census will also be clear and all operational preparations for using administrative data will have been completed.

In other words, the key objective of this phase is to be ready to implement the administrative census or administrative components of the combined census. The CIP Objectives and Deliverables are shown below.

Table 10 Detailed Technical Preparation and Testing – Administrative Census - Objectives/Deliverables

CIP Number	CIP Objectives/Deliverables	End Date
2.3	Detailed Preparation and Testing	
2.3.2	All countries using administrative data to complete detailed data quality assessments	Q4, 2018
2.3.4	All countries have implemented their testing programme	Q4, 2019
2.3.6	All countries to prepare IT systems, databases and infrastructure	Q4, 2019
2.3.7	All countries have finalised all operational preparations	Q4, 2019
2.3.9	All countries have determined how to evaluate the census results and census project based on the guidelines	Q4, 2019

Detailed Technical Preparation and Testing – Administrative Data - Activities and Tasks

The activities to deliver on these objectives include the detailed assessment of the register sources, preparation of the detailed statistical methodology needed to support the creation of the administrative register census files, design and preparation of the IT systems and databases. Appropriate testing is critical. This includes testing of the statistical database, as well as the IT systems.

Consideration also needs to be given at this stage to how the final census results will be evaluated. While the evaluation processes will be independent of the census operations, the planning of the census needs to ensure any requirements are built into systems, processes and procedures.

The main tasks to be conducted by NSOs are shown in Table 11. NSOs may also have additional country specific tasks to support these activities.

Notes:

The following GCC-Stat activities may be used by NSOs to complete some of the other activities. (These are also shown in Appendix 1.)

CIP Number 2.3.1 – Data Quality Assessment guidelines and techniques prepared, to be published in Q1, 2017.

CIP Number 2.3.3 - Guidelines for detailed data preparation and testing prepared, scheduled for Q2, 2017

CIP Number 2.3.5 Guidelines for all Operational steps of Census to be prepared., scheduled for Q1, 2019

CIP Number 2.3.8 Guidelines for Evaluation prepared, scheduled for Q1, 2019

CIP Number 2.3.10 Guidelines to documenting the Census. This is will be prepared progressively.

Table 11 Detailed Technical Preparation and Testing, Administrative Activities and Tasks.

CIP No	Objective	Activity	Tasks	End Date
2.3.2	All countries using administrative data to complete detailed data quality assessments			Q4, 2018
		Detailed Data Quality Assessment	Complete Investigation and Assessment of all of the possible Register sources	
		Statistical Register Creation	Establish rules to create registers based on multiple sources	
			Create an initial set of statistical registers and determine if these cover all the required population	
			Create an initial administrative register based census database and identify any gaps	
			Review/Update the initial Census Design following Assessment	
2.3.4	All countries have completed the implementation of the testing programme			Q4, 2019
		Testing	Prepare a Testing programme	
			Test all statistical methodologies	
			Test data transfer systems	
			Test data linking processes	
			Conduct pilot tests of integrated Administrative data	
		Finalise Design and Methods	Finalise Methodologies	
			Review the Initial Census Design following testing	
			Refine and Finalise Census Design	

CIP No	Objective	Activity	Tasks	End Date	
			Finalise Topics and/or parts of populations to be collected using Fieldwork		
2.3.6	All countries to prepare IT systems, databases and infrastructure			Q4, 2019	
		Initial IT Design	Prepare initial design of IT systems		
			Prepare Initial database schema		
			Evaluate Hardware and Software options		
		Outsourcing	Confirm IT outsourcing requirements and determine suppliers/partners		
			Implement Outsourcing arrangements		
			Test outsourcing		
		Systems and Data base Preparation	Prepare data transfer systems (as needed)		
			Prepare data management systems		
			Preparation of preliminary information technology systems (including databases)		
			Test IT systems and databases		
		Finalise IT systems	Complete Preparation of IT systems (including databases)		
2.3.8		All countries have determined how to evaluate the census results and census project based on the guidelines			Q4, 2019
			Statistical Evaluation Approach	Prepare approach to Statistical Evaluation	
	Agree on Approach to Statistical Evaluation				
	Identify High Level Requirements for Census Systems, Methods and Operations				
2.3.9	All countries have finalised all operational preparations			Q4, 2019	
		Operational Preparations	Sign-off tested systems		
			Move final systems into Production		
			Finalise all Operational aspects for 2020 Census		

4.6.3 Detailed Technical Preparation and Testing, Administrative Activity/Task Descriptions

Detailed data quality assessments

Completion of detailed assessment of administrative data sources. This includes finalizing the administrative registers and the specific variables that meet the necessary requirements set out in the data basket. As part of this assessment, it is important to ensure that it will be possible to assign each housing unit to its correct unit geography (e.g. GPS or enumeration area), and that each person can be assigned to the correct housing unit.

Statistical Register Creation

Create the trial set of statistical registers and determine if this meets requirements. This includes creating and testing rules for creating registers based on multiple sources.

Testing

Complete testing of all data sources, systems and processes across the census. This includes determining how the administrative register census data will be tested ²², finalizing and testing methodology and IT systems, and conducting rigorous tests of all processes and systems.

Note – there are likely to be a series of tests, as improvements are made.

Finalise Design and Methods

Following the final testing, agree on the final design (mix of administrative data and field work) methodologies and procedures).

IT Design

Prepare the initial IT design, including infrastructure requirements and how out-sourcing of IT will be used.

Outsourcing

Confirm and implement outsourcing arrangements

Systems and Database Preparation

Build and Test IT systems and databases

Finalise IT Systems

Finalize all the IT systems, infrastructure and databases in order to be ready to receive the final versions of the administrative sources

Statistical Evaluation Approach

Determine how the final census statistics will be evaluated. Options include surveys (such as a Post Enumeration Survey) and/or statistical techniques such as, Demographic analysis. (The implementation is included in Section 4.8.7). Detailed preparations may be needed (e.g. planning a Post Enumeration Survey) which may also affect the main census activities.

Finalise operational preparations

Complete operational preparations includes ensuring that all systems and processes are ready to receive the final administrative sources applicable to the common census reference date.

4.7 Detailed Preparation and Testing – Fieldwork Component

For NSOs that are conducting a Combined (Administrative/Fieldwork) Census, additional detailed preparations are required. A summary of these are listed below. Local conditions will mean specific additional activities and tasks need to be added.

4.7.1 Detailed Technical Preparation and Testing – Fieldwork - Objectives/Deliverables

The overall objective is to be ready to conduct the Fieldwork, including Fieldwork components of Combined Census. The specific objectives and deliverables for these components are shown below.

²² Options include conducting a full enumeration to provide a set of records as a comparison, conducting a pilot study and comparing a sample of records. It may be necessary to conduct a series of tests, including different parts of the population.

Table 12 Detailed Technical Preparation and Testing Fieldwork Objectives/Deliverables

CIP Number	CIP Objectives/Deliverables	End Date
2.3	Detailed Preparation and Testing	
2.3.4	All countries have implemented their testing programme	Q4, 2019
2.3.6	All countries to prepare IT systems, databases and infrastructure	Q4, 2019
2.3.7	All countries have finalised all operational preparations	Q4, 2019

The objective related to Evaluation discussed in section 4.6 above, also applies to the Fieldwork component.

4.7.2 Detailed Technical Preparation and Testing, Fieldwork Activities and Tasks

The main activities and tasks to achieve these objectives are shown in Table 13. This table only describes Fieldwork related activities. It excludes activities related specifically to Administrative register components, common activities (e.g. Evaluation) and activities that are the direct responsibility of GCC-Stat.

Table 13 Detailed Preparation and Testing Fieldwork Activities and Tasks

CIP No	Objectives	Activity	Tasks	End Date
2.3.4	All countries have completed the implementation of the testing programme –Fieldwork			Q4, 2019
		Fieldwork Preparation	Prepare Fieldwork Operational Processes	
		Mapping Preparation	Determine how housing units and buildings will be located	
			Determine mapping requirements	
			Determine how mapping will be provided	
			Determine and acquire if needed, the necessary mapping technology	
		Fieldwork Testing	Determine how the Fieldwork components will be tested	
			Design and test Forms	
			Test Fieldwork systems, processes and forms	
			Test data linking processes between Administrative and Fieldwork	
			Conduct pilot tests of Fieldwork or Combined Fieldwork/Administrative data	
		Finalise Design	Review the Initial Census Design following testing	
			Refine and Finalise Census Design	
2.3.6	All countries to prepare IT systems, databases and infrastructure			Q4, 2019
		Finalise IT systems	Determine final IT system requirements (including database)	
			Design IT systems	
			Complete Preparation of IT systems (including databases)	

CIP No	Objectives	Activity	Tasks	End Date
			Test IT systems and database	
2.3.7	All countries have finalised all fieldwork operational preparations			Q4, 2019
		Fieldwork Frame and Sample	Determine frame for selection of Fieldwork units	
			Design sample (if required)	
			Select sample (if required)	
		Operational Preparations	Confirm operational requirements for Fieldwork	
			Prepare detailed plans for Fieldwork Operations	
		Recruitment and Training	Recruit Field workers	
			Train Field workers	
		Printing and Mapping	Design and print any paper forms	
			Implement Mapping requirements	
		Publicity and Respondent Support	Determine and design publicity campaign	
			Put Respondent Support processes in place	
		Finalise Operational Readiness	Set up Fieldwork Payment system	
			Finalise all Operational aspects for 2020 Census	Q4, 2019

4.7.3 Detailed Technical Preparation and Testing Fieldwork Activity/Task Descriptions

Fieldwork Preparation

This includes determining the fieldwork processes and procedures – i.e. how the fieldwork will be conducted. This design includes whether paper or electronic forms will be used to collect data in the field, as well as how the fieldwork processes link with the administrative census components.

Mapping preparation

This includes determining how housing units and buildings will be located (e.g. through use of GPS on tablet device) and mapping requirements for all steps of the fieldwork. This includes whether electronic or paper maps are required. Mapping preparation also includes determining whether the mapping services will be provided in house or through outsourcing. It may also be necessary to acquire specific technology to provide mapping solutions either for preparing fieldwork maps or output products. The final production of any maps is included in Printing and Mapping

Fieldwork testing

Designing and then implementing the testing of the different fieldwork components (e.g. forms, processes and systems and links to the administrative census systems). This also includes testing of forms (paper and electronic). Note – there may need to be a series of tests.

Finalise Design

Reviewing and updating the proposed design for the fieldwork, following testing

Finalise IT systems

Identifying requirements, designing, building and testing systems and databases, as well as providing the necessary architecture.

Operational Preparations

Identifying the staffing and operational requirements (e.g. offices, logistics).

Recruitment and Training

Recruiting and training the temporary staff needed for fieldwork operations

Printing and Mapping

Identifying and providing printing requirements. Preparing final maps for fieldwork (electronic or paper copy).

Publicity and Respondent support

Designing and providing publicity and promotion material and other respondent support (such as call centre, etc.)

Finalise Operational Readiness

Completing the final operational preparations for the fieldwork components.

4.8 Implementing the Census

4.8.1 Implementation Objectives/Deliverables

The extensive preparation activities described in sections 4.4 – 4.7 are the foundation for the successful implementation of the census. Objective 2.4 of the Country Implementation Plan is focused on Implementation – the conduct of all operational steps in the harmonised census (including the release of data). The sub-objectives to complete these are shown in Table 14.

Table 14 Implementation Objectives/Deliverables

CIP Number	CIP Objectives/Deliverables	End Date
2.4	Conduct all steps of the harmonized Census (including first release of statistics)	
2.4.1	All countries to complete Census data collection	Q1, 2020
2.4.2	All countries to complete all processing of 2020 Census data	Q3, 2020
2.4.3	All countries to complete full analysis of 2020 Census data	Q2, 2021
2.4.4	All countries to complete the first release of Census statistics	Q4, 2020
2.4.5	All countries to complete dissemination of all data	Q4, 2021
2.4.6	All countries to complete the evaluation of the census results and project	Q4, 2022
2.4.7	All countries have completed the census project, including archiving of documentation	Q4, 2022

Implementation covers the following operational phases

- Collection
- Processing
- Analysis
- Dissemination
- Evaluation
- Project Completion, including archiving of documentation

To assist in planning, the main activities and tasks are separately identified for each of these phases of the census cycle.

4.8.2 Data Collection Activities and Tasks

This covers the activities to collate the final versions of register sources, as well as the activities to collect data using fieldwork sources.

The activities and tasks for the Administrative Census (or Administrative component of a Combined Census) are shown first in Table 15, followed by the Fieldwork Census components.

Table 15 Data Collection (Administrative and Fieldwork) Activities and Tasks

CIP Number	Objective	Activity	Task	End Date
2.4.1	All countries to complete Census data collection - Administrative Census components	Receipt of final data	Receive all administrative register sources	Q1, 2020
			Review of all register sources	
		Creation of final statistical registers	Create final statistical base registers	
			Create final administrative register based census records	
			Update/Create Metadata	
			Link Administrative and Fieldwork Census data	
		Upload or Transfer final data		
		All countries to complete Census data collection Fieldwork Components		
	Fieldwork Operations	Activate Field Management Operations		
		Load Fieldwork systems and tools		
		Distribute of equipment and material		
	Publicity, Promotion and Respondent Support	Implement Publicity Campaign		
		Implement Respondent Support (Call Centre)		
		Manage Respondent Queries		
	Fieldwork Collection	Collect Data		
		Data Capture of paper forms		
		Create Fieldwork Metadata		
		Collect Final Fieldwork Data, including Non-respondents		
	Fieldwork Completion	Payment of Field staff		
		Transfer data		
		Close down temporary operations		

Data Collection Activity/Task Descriptions

Receipt of Final Register Data

Receipt of the final data from the administrative agencies

Creation of final versions of register census

Creating the administrative based census file, from the final versions of the register data sourced from agencies. This also includes the creation and updating of metadata for the administrative records.

Fieldwork Operation

Completing the final tasks to be ready to conduct the fieldwork. This includes final distributions of material and equipment to the fieldwork teams, ensuring fieldworkers are assigned to the correct areas as well as final loading of equipment and material.

Publicity, Promotion and Respondent Support

Implementation and operations of Publicity, promotion and respondent support, including managing queries from the public.

Fieldwork Collection

This includes the collection of data and follow-up of non-responses. Data capture of paper forms and creation of fieldwork metadata are also included.

Fieldwork Completion

This includes paying of field staff. Closing down offices and transfer of final data (as required).

4.8.3 Processing Activities and Tasks

Processing includes the statistical activities required to provide clean, weighted unit records that have had any identifying information removed.

Processing may include coding of text responses, edit and validation checks on data collected in the field or collated from administrative sources, imputation of missing or invalid responses. Processing will also include creating census records which do not include identifiers (e.g. Name and Address), weighting of data (where relevant), and deriving variables and totals.

The exact design of the Processing operations will partly depend on the design of the Data collection, as well as strategic decisions made on the extent of required checks, and the extent of automation. For example, if the census only uses registers, where data are already coded to the statistical standards, then coding operations during processing will not be needed. The types of checks during processing will also depend on the rules applied in the collation phase.

However, if the census includes a large fieldwork component, or administrative data with large numbers of text responses required to be coded, then a coding operation will be needed. However, if automated coding systems are prepared and implemented, then the size of the coding team will be reduced.

The full list of activities and tasks are shown in Table 16.

Table 16 Processing Activities and Tasks

CIP No	Objective	Activity	Tasks	End Date
2.4.2	All countries to complete all processing of 2020 Census data	Processing Design	Agree on Processing approach	Q3, 2020
			Prepare Processing Methodologies and Techniques	
			Design Processing Systems	
		Building and Testing Processing Systems	Determine system requirements	
			Build Processing Systems	
			Design Processing databases and schema	
			Test Processing systems	
			Prepare final Processing systems and databases	
		Determine staffing requirements		

CIP No	Objective	Activity	Tasks	End Date
		Processing Operations preparation (where needed)	Determine other operational requirements	
			Recruit temporary staff	
			Train temporary staff	
		Processing Operations	Micro-edit data	
			Code text responses	
			Impute missing or invalid data	
			Remove identifiers	
			Weight up data from fieldworks	
			Create derivations and totals	
			Update Metadata	
			Create of finalised data files	
			Complete final processing	

Processing Activity/Task Descriptions

Processing Design

Designing how the micro-editing/validation and coding of any text responses will be conducted, including the role of different functions and the extent of automation.

Build Processing Systems

Building the Processing systems to the agreed design

Processing Operations Preparations (where needed)

Establishing processing operations if needed. The specific arrangements will depend on the design.

Processing Operations

This includes editing and validation of individual records (Micro-Editing), coding (assigning standard codes to text responses), Imputation (correction of missing or invalid records), deriving new variables (including ratios) and creating totals.

4.8.4. Analysis Activities and Tasks

Analysis is conducted on the processed data. It has two main functions – checking the data from a macro or output perspective (also known as Macro or Output Editing), and understanding the data prior to final release. The analysis stage also includes preparing the final data for approval and loading these into the agreed dissemination products and services.

(Checking of individual records or inconsistencies – also known as Micro-editing, is undertaken during the Processing phase.)

Macro-Editing may identify issues that require data to be re-processed. For example, Macro editing may identify that the wrong edit or validation rules have been applied. The data will therefore have to be returned to Processing for further work.

However, Macro-editing may also identify issues that cannot be resolved in Processing. For example, there may be a need to review the treatment undertaken in creating variables in the statistical register (e.g. the Prioritisation method for creating variables), or even investigate the initial administrative register sources. For this reason, there may be a number of iterations between Analysis, Processing and creation of the Administrative Census records.

It is important that the project plan support these iterations

Gathering of information to understand the impact of changes in methodology, especially in the move from traditional to combined or to administrative census, is an important part of the Analysis function. This will be used to interpret and explain any changes in statistics between censuses.

The main analysis activities and tasks are shown in Table 17.

Note: Most NSOs will release census data progressively. This means that the analysis will also occur progressively, depending in part on the mixture of census output products and services. The project plan must also allow for this.

Table 17 Analysis Activities and Tasks

CIP No	Objective	Activity	Tasks	End Date
2.4.3	All countries to complete full analysis of 2020 Census data			Q2, 2021
		Analysis Preparation	Prepare background material	
			Prepare final analysis and macros editing methods	
			Train Analysts in techniques	
		Macro/Output Editing	Check on response or coverage rates	
			Compare 2020 data with previous data	
			Compare 2020 data with other sources	
			Conduct demographic analysis (e.g. cohort analysis)	
			Identify and Investigate inconsistencies	
		Analysis	Understand impact of changes in methodologies on 2020 data	
			Prepare explanations of statistics, including major changes since 2010	
			Prepare analysis reports	
		Approvals	Approval of final statistics for release	

Analysis Activity/Task Descriptions

Analysis Preparation

Preparation includes determining how the data will be analysed and preparing relevant background data (e.g. previous data or other sources). Preparation also includes training of analysts to understand the analysis techniques

Macro/Output Editing

Macro-Editing refers to the set of checks conducted on the main statistical outputs. These checks include

- Checks on response or coverage rates
- Comparing of data with previous data
- Comparing data with other sources
- Conducting demographic analysis (e.g. cohort analysis)
- Identifying and investigating inconsistencies

Analysis

The main tasks are to prepare explanations of the statistics, including major changes since 2010. This includes understanding the impacts of changes in methodologies, definitions and classifications.

Completing these checks helps to understand the impact of changes in methodologies, and is key to helping to interpret and explain the statistics to be produced in the Dissemination phase. Analysis reports explaining the statistics are also part of this activity.

Approvals

At the conclusion of the Analysis phase, recommendations on the census data to be released should be made to the relevant senior manager. This assessment will be made using the quality criteria and frameworks determined in the Initial Preparation stage.

4.8.5 Dissemination Activities and Tasks

Dissemination is the release to users of statistical information. It includes the first release of Census statistics, as well as later releases. Dissemination can be seen as comprised of three sub-phases – Preparation, First Release and Subsequent Release.

The Dissemination Preparation sub-phase applies to both First Release and the Subsequent Release. Many of the operational activities for the First Release will then be repeated as subsequent data are released. The range of activities and tasks for Dissemination are shown in Table 18.

Table 18 Dissemination Activities and Tasks

CIP No	Objective	Activity	Tasks	End Date
	Dissemination Preparation			
		User Requirements	Identify User Requirements	
			Define Detailed Output Requirements	
			Determine specific Products and Services to be disseminated	
			Determine Harmonised Output	
		Output Geography	Finalise the output geography requirements	
			Identify specific geographical products (e.g. atlases, geospatial databases)	
			Determine how the output geography requirements will be met in the different products and services	
		Census Output Schedule	Determine Release Schedule for country level Products	
			Agree on common release dates for release of GCC level aggregates	
		Disclosure Control	Agree on approach to Disclosure Control	
			Prepare Disclosure Control Techniques and Routines	
		Prepare Output Tools	Design and Build Products and Services	
			Build IT Output Systems	
			Design Output Metadata	
			Design Final Output Databases	
			Prepare Dissemination infrastructure	
2.4.4	All countries to complete the first release of Census statistics			Q4, 2020
	Approvals		Final approvals for release	
	Produce First Release		Loading approved data into Output systems	
			Create Output Metadata	
			Produce dissemination products	
			Prepare final User Support material	

CIP No	Objective	Activity	Tasks	End Date
			Disseminate data	
2.4.5	All countries to complete dissemination of all data			Q4, 2021
		Produce Subsequent Products and Services	Loading approved data into Output systems	
			Create Output Metadata	
			Produce dissemination products	
			Disseminate data	
		Ongoing User Support and Promotion	Prepare final User Support material	
			Managing the release of products	
			Promotion of products and services	
			User Support	

Dissemination Activity/Task Descriptions

User Requirements

This includes determining user requirements – including types of information required from the census and timelines. In addition, NSOs may also make confidential files of census data available to authorized users or for public use. (These files may be a sample of census records, which have had specific rules applied to ensure that the data are confidential and no individuals can be identified.) Dissemination may include customized tabulations provided to meet specific requests. A subsequent task is then to determine the methods to meet the different user requirements. This may include web reports and on paper, tools to create and access user-defined queries, as well as customized tabulations provided to meet specific requests.

Output Geography

A key purpose of the census is to produce statistics about small geographical areas. It is therefore critical to finalise the output geography for the different products and services and how they will be met, and identify specific geographical products (e.g. atlases, geospatial databases, interactive geospatial products).

Census Output Schedule

While the deliverable in the CIP relates to the first release of Census statistics, including providing the relevant data to GCC-Stat, NSOs need to plan for the full program of release of Census statistics. Preparing a schedule of when the different output products and services will be ready to meet the different sets of user needs is critical. A related task is determining the common release date for the first release of GCC level data.

Disclosure Control

An important associated part of preparing census outputs is Statistical Disclosure Control (ensuring that the statistical information is confidential). The aim is to reduce the risk of disclosing information on individuals, households/families while still ensuring that the statistical outputs remain valuable to the users. Methods are usually based on restricting the amount of data released, or modifying the data before it is released.

Prepare Output Tools

Depending on the mix of products and services, specialist output tools may need to be built to disseminate the data.

Approvals

Before release, census outputs must be approved for release. The approval process will be country specific.

Produce First Release

This includes the different tasks to produce the first release of 2020 Census data. This includes applying the final output tools to the final approved datasets.

Produce Subsequent Releases

This includes the different tasks to produce the subsequent releases of census data.

User Support and Promotion

The series of tasks such as promotion, providing customized tables, support for users in using the specialist tools and/or census data

4.8.6 Evaluation Activities

Statistical evaluation of the Population and Housing Census aims to understand the overall quality of the census, primarily from the perspective of the users. The evaluation will also help statistical offices prepare for the next census.

The approach to Statistical Evaluation should be determined as part of the Detailed Preparation activities set out in section 4.6.3.. The activities and tasks presented in this section are the more common statistical techniques

Table 19 shows possible Evaluation activities and tasks. One option is to evaluate the Census using Demographic techniques. While some of these may be applied during the Analysis phase, it is also good practice to prepare a final set of assessments at the conclusion of the census project. This helps users (internally and externally) in their subsequent use of census data. If a Post Enumeration Survey (PES) will be conducted, it will need a detailed plan, including interdependencies with the Census project.

Table 19 Evaluation Activities and Tasks

CIP No	Objective	Activity	Tasks	End Date
2.4.6	All countries to complete the evaluation of the census results	Evaluation Design	Agree on Evaluation Design	
			Prepare plan for agreed Evaluation Design	
		PES	Design and Prepare PES	
			Identify interdependencies and requirements for Census design and operations	
			Collect and process PES Data	
			Match PES Records with Census records	
			Analyse PES Results	
			Prepare Results	
		Demographic Analysis	Conduct Demographic Analysis	
			Prepare Results	
		Reporting	Prepare and publish Reports of Statistical Evaluation	

Evaluation Activity/Task Descriptions

Evaluation Design

Decisions will be made earlier in the project on the overall approach to the Census Evaluation. The tasks here include identifying and planning all the technical activities and tasks needed to deliver on this design.

PES

A Post Enumeration Survey (PES) is a common form of evaluating the quality of the coverage (i.e. count) and at times, the quality of some of the topics collected in the census (content). A PES will also need its own detailed plan. The UN guidelines can be used to prepare the detailed plan. These are available in English at (http://unstats.un.org/unsd/demographic/standmeth/handbooks/Manual_PESen.pdf).

Demographic Analysis

Preparing and then conducting these techniques requires preparation, as well as applying analytical techniques. These should also be carefully scheduled. An international manual such as the resource kit prepared by the International Union for the Scientific Study of Population ²³ provides a good base for preparing the required evaluations.

Reports of Statistical Evaluation

It is critical that the results of the evaluation are published and made available to users. In this way the overall quality of the census project is enhanced.

Note

It is important not to confuse evaluations of the quality of the administrative sources, with evaluating the final quality of the census. Evaluating the quality of the sources should be conducted throughout the Preparation and Collation Phases.

The evaluation of the overall project is part of the Project Closure activities described in section 2.8.

4.8.7 Archiving and Documentation Activities

All Census projects include documentation of all the different processes, including the initial project requirements, documentation of the preparation and operational phases, and information on testing of processes and systems.

The cumulative experience of past censuses in a country is very useful in the preparation of a new census. Because of the lapse of time between censuses (generally 10 years) and the likelihood that experienced staff may leave the census office, it is essential that there is a comprehensive record of how the census was planned, organized and conducted.

Increasingly there is also a demand for archiving of census records. The essential purpose of archiving individual census records is to keep them safe for future use, primarily for future genealogical research (as practiced by some countries in the world²⁴) and longitudinal social and anthropological studies, as well as for the use by historians and demographers.

²³ See "General assessment of age and sex data". In Moultrie TA, RE Dorrington, AG Hill, K Hill, IM Timæus and B Zaba (eds). *Tools for Demographic Estimation*. Paris: International Union for the Scientific Study of Population. <http://demographicestimation.iussp.org/content/general-assessment-age-and-sex-data>.

²⁴ Countries such as the US, UK, Australia, Canada make Census records available after a long period. In the US, records are available 72 years after the census. The 1940 census records were released in 2012. The UK releases census records after 100 years. The most recent available census records in the UK are from the 1911 Census.

The key tasks for Archiving and Documentation activities are shown in Table 20.

Table 20 Archiving and Documentation Activities and Tasks

CIP No	Objective	Activity	Tasks	End Date
2.4.7	All countries have completed the census project, including archiving of documentation	Documentation	Establish knowledge management system	
			Prepare documentation	
		Census Historical Summary	Prepare and Publish Summary document	
		Archiving Preparation	Determine what is to be archived	
			Confirm legal arrangements	
			Agree on Archiving Procedures	
		Archiving Operations	Archive records	
		Project Completion	Complete remaining technical or operational activities	

Archiving and Documentation Activity/Task Descriptions

Documentation

This includes the establishment and implementation of a knowledge management system to assemble the complete records on plans, activities, and decisions taken during the entire census operation.

It can be useful to organize the documentation chronologically as the project progresses. This can make it easier to locate information in the future.

The documents associated with the project must be stored in a safe location where they can be retrieved for future reference. Signed contracts or other documents must be stored, consistent with the country and NSO requirements.

It is recommended that documentation of census experience be undertaken at each stage of the census cycle and not be left until the end of the census project.

Census Historical Summary

An administrative and methodological report containing information on the manner in which the census was planned, organized and conducted, as well as important methodological and other problems encountered at various stages of the census.²⁵

Archiving Preparation

This includes determining what is to be archived, finalizing legal arrangements and archiving procedures. Preparation should be made to archive the data in its various forms (raw data, linked but not edited, edited, linked, anonymized). The metadata should also be archived as well, recognizing that final versions of the metadata will be provided as part of the dissemination of the census results.

Archiving Operations

Archiving of Records and Metadata as per the agreed Archiving Procedures

²⁵ More on the recommended content of this can be found in the Census Recommendations and Guidelines, Revision 3 <http://unstats.un.org/unsd/statcom/doc15/BG-Censuses.pdf>

Project Completion

Any remaining technical or operational activities to complete the project. These will be done in conjunction with the Project Closure activities set out in section 2.8 above.

4.9 Stakeholder Management

4.9.1 Stakeholder Management Objectives/Deliverables

Stakeholder Management is critical for the success of any census in the region. The overall objective is to ensure effective collaboration and support from key partners/suppliers/ data users at the country, regional and international level. The specific Census objective is shown in Table 21 below.

Table 21 Stakeholder Management Objectives/Deliverables

CIP No	Objective	End Date
2.6	Collaboration at the country, GCC and international levels	
2.6.2	All countries to determine stakeholders for 2020 Census and confirm information needs	

There are many different Census stakeholders, including users, providers of administrative data as well as providers of other services. Each group needs to be carefully managed.

While census stakeholder management will be used to help support many technical and operational activities (e.g. user consultation on data basket, consultation with ministries/agencies regarding supply of data), it is also important to see it as part of the wider NSO relationship management.

Stakeholder management may be done electronically (web, social media) or through meetings.

4.9.2 Collaboration and Stakeholder Management Activities and Tasks

The specific activities and tasks, particularly in relation to the Register Census are shown in Table 22. Note : Management of different stakeholder groups will be done as part of the relevant technical activities, but needs to be overseen in an integrated way.

Table 22 Collaboration and Stakeholder Management Activities and Tasks

CIP No	Activity	Activity	Tasks	End Date
2.6.2		All countries to determine stakeholders for 2020 Census and confirm information needs		
		Stakeholder Management	Identify overall census stakeholders	
			Prepare stakeholder management plans	
		Users	Identify users	
			Determine communication methods	
			Identify information needs for Census basket from users	
			Identify needs for statistical outputs (tables, products and services)	
			Collect feedback from users on outputs	
		Administrative Data Suppliers	Identify Administrative agencies supplying data	
			Establish Partnerships with administrative agencies	
			Manage suppliers through census lifecycle	
		Public Support	Establish appropriate communications to maintain public support	

4.9.3 Collaboration and Stakeholder Management Activity/Task Descriptions

Stakeholder Management

Identification and management of key stakeholders for the Census. Stakeholders may include:-

- Higher Level Committee
- Senior representatives of Agencies providing register data
- Technical/Operational representatives providing register data
- Users (including senior and technical representatives of organisations that will use the data)

Stakeholder management plans should be prepared for each group of stakeholders.

It is important that all stakeholders are managed throughout the census life cycle. (This may include meetings, media, other channels such as the website and social media.)

Users

Consultations with users of census data on topics, on definitions and, particularly, on planned tabulations and other outputs and the development of the census database is a key step in census preparations.²⁶ They help ensure that, within constraints, the census is as responsive as possible to user needs. They also serve to foster a wider and more informed understanding of and support for census plans and activities.

Users will come from governmental agencies and ministries, universities and other research institutions, the private sector, and other organizations (or individuals) representing the economic, social, educational and cultural life of the country.

Administrative Data Suppliers

Other key stakeholders will include agencies and ministries that are providing administrative data and/or other services. Ministries and agencies providing administrative sources may have different levels of stakeholders. For example, some may be strategic, while others technical.

Public Support

Support of the public for census activities is very important and needs to be planned well. This includes ensuring the public has the opportunities at appropriate times to comment on census strategy. Additional communication will be carried out during any fieldwork and during the release of census statistics.

Section 5 Overall Challenges in an Administrative Register based Census Project

In spite of good planning and preparations, projects encounter problems. Accordingly, it is important to prepare and implement good risk management techniques

All census projects have challenges and risks. The challenges in conducting fieldwork (traditional) censuses are well known in the GCC region. These can include the challenges of recruiting sufficient field staff with the relevant skills, successfully enumerating all the different parts of the population, delivering the required sets of statistical outputs in the required timeframes.

Transitioning from a traditional to administrative based census, will encounter additional challenges. Some of these are described in Table 23 below.

²⁶ See also the UN Recommendations and Guidelines for Population and Housing Census, Revision 3, <http://unstats.un.org/unsd/statcom/doc15/BG-Censuses.pdf>

Table 23 Challenges in Administrative Register Census Projects

Domain	Challenge/Issue	Likely Cause	Possible Solution
Strategic	Direction of project not clear	Strategic preparation not completed fully	Conduct (repeat) Pre-conditions assessment. Review / confirm strategic direction
	Move to Administrative based Register Census not supported by all agencies	Strategic direction not well understood/communicated	Discuss issues with Higher Level Committee
		Agency not willing to share data	Understand the reasons – e.g. operational, technical or strategic. NSO may be able to help with operational and technical issues
	Resources (budget and/or people) not sufficient for project	Planning and budgets not aligned	Reduce scope of project. Focus on small number of core data basket items
	Not able to meet agreed Harmonised requirements	Harmonised needs not clearly understood	Identify and discuss options for meeting harmonised requirements with GCC-Stat
Technical	Difficult to access all required sources	Some agencies may not fully support project	Lack of support should be discussed with Higher Level Committee. Identify alternatives
		Technical reasons (e.g. not stored electronically)	
	Poor quality of some data initially included in database means it cannot be used	Assessment of data conducted too late to allow agencies to improve processes	Identify alternatives Provide feedback to relevant agencies Use the quality framework to determine if data can be released. Be prepared not to release data of unacceptable standard
	Inconsistencies between sources	Administrative data reflects different situations	Establish clear rules on dealing with inconsistencies Ensure Higher Level Committee understands how the differences between sources will be managed
	Not easy to link using standard IDs	Standard IDs (e.g. ID card numbers) not used consistently across sources	Create statistical IDs for linking
Results	Census Statistics not internally consistent	Analysis and Macro-editing not done properly	Re-do analysis and macro editing. If statistics have been published, be prepared to revise and reissue some results Work with users to understand concerns and explain differences

Domain	Challenge/Issue	Likely Cause	Possible Solution
	Results from first Administrative based census not consistent with other censuses or statistics	Different methodologies and sources Meta data not clear	Be clear at the start of the project with users and other stakeholders Work with users to understand the impact Ensure that the metadata is clear
	Results not timely	Poor planning or unexpected events	Work with users on impacts

This table does not present all the likely scenarios or challenges. It is therefore critical to use the Risk Management techniques set out in Section 3.7 to help prepare possible solutions.

Appendices

Appendix 1 2020 Census Country Implementation Plan framework

CIP Number	Census Country Implementation Plan (CIP) Objectives/Deliverables	End Date
	Prepare a detailed, specific Implementation Plan to achieve the agreed objectives/milestones	
	OBJECTIVE 1: Regular assembly and dissemination of statistics, including aggregate GCC-level	
	OBJECTIVE 2: Using administrative sources, conduct a harmonized population census in 2020 for the GCC region, in such a way that agreed datasets can be validly aggregated to the GCC level and consistent with the UN recommendations for the 2020 Population and Housing census round	
2.1	Initial steps to conduct a harmonized 2020 population census, consistent with UN recommendations	
2.1.1	All countries confirm intention to conduct harmonised Census in 2020	Q2, 2017
2.1.2	Agreement on adoption of 2020 UN Recommendations and standards in GCC countries	Q2, 2017
2.1.3	All countries to finalise GCC Harmonised Data Basket	Q2, 2017
2.1.4	All countries to agree on the common 'Census date'	Q4, 2017
2.1.5	All countries to finalize scope of country specific Census (including country specific data items) s	Q4, 2017
2.1.6	All countries to agree budgets and approvals for the 2020 Census	Q4, 2017
2.2	Preparatory steps to conduct the 2020 population census using administrative registers	
2.2.1	Pre-Conditions for Administrative based Census to be prepared	Q3,2015
2.2.2	All countries to assess feasibility of using administrative registers for 2020 Census	Q4,2017
2.2.3	2.2.3 Administrative Census Planning Guidelines to be prepared	
2.2.4	All countries to develop legislation changes (as needed)	Q1, 2017
2.2.5	Countries to identify country level Census designs (mix of administrative and fieldwork) and supporting methods and systems	Q4,2017
2.3	Detailed Preparation and Testing	
2.3.1	Data Quality Assessment guidelines and techniques prepared	Q1, 2017
2.3.2	All countries using administrative data to complete detailed data quality assessments	Q4, 2018
2.3.3	Guidelines for detailed data preparation and testing prepared	Q2, 2017
2.3.4	All countries have implemented their testing programme	Q4, 2019
2.3.5	Guidelines for all Operational steps of Census to be prepared	Q1,2019
2.3.6	All countries to prepare IT systems, databases and infrastructure	Q4, 2019
2.3.7	All countries have finalised all operational preparations	Q4, 2019
2.3.8	Guidelines for Evaluation prepared	Q1,2019

CIP Number	Census Country Objectives/Deliverables	Implementation Plan (CIP)	End Date
2.3.9	All countries have determined how to evaluate the census results and census project based on the guidelines		Q4, 2019
2.3.10	Guidelines to documenting the Census prepared		Ongoing
2.4	Conduct all steps of the harmonized Census (including first release of statistics)		
2.4.1	All countries to complete Census data collection		Q1, 2020
2.4.2	All countries to complete all processing of 2020 Census data		Q3, 2020
2.4.3	All countries to complete full analysis of 2020 Census data		Q2, 2021
2.4.4	All countries to complete the first release of Census statistics		Q4, 2020
2.4.5	All countries to complete dissemination of all data		Q4, 2021
2.4.6	All countries to complete the evaluation of the census results and project		Q4, 2022
2.4.7	All countries have completed the census project, including archiving of documentation		Q4, 2022
2.5	GCC level aggregates to be prepared and released		
2.5.1	Agreement on data to be aggregated at GCC level		Q2,2018
2.6	Collaboration at the country, GCC and international levels		
2.6.1	NSCs to take steps to strengthen collaboration at country levels		ongoing
2.6.2	All countries to determine stakeholders for 2020 Census and confirm information needs		Q2, 2017
2.6.3	The Committee on 2020 population census		
	Hold regular meetings of the Committee		ongoing
	Countries to actively participate in the meetings of the Committee		ongoing
2.6.4:	Involvement of GCC-Stat countries in international census meetings		ongoing
	OBJECTIVE 3: Develop national capacities in this field of statistics		
3.1	GCC-Stat to provide in-country technical assistance and training		
3.1.1	Countries to regularly send their requests for technical and training support		ongoing
3.1.2	GCC-Stat to provide countries with the requested support		ongoing
2.2	GCC-Stat to provide regional training courses and workshops		ongoing

Appendix 2 IT in the Administrative Register Census

Overview

Information Management and Technology are key enablers for any Census project. Technology has the potential to improve the quality of censuses and greatly reduce the cost – although in the short term, the introduction of new technology may increase costs.

While the range of technology applied in a fully register based census may be less than in a traditional or combined census, without integrated and effective information management and technology it is not possible to conduct an administrative register based census project.

This section gives an overview of some of the key factors to consider in planning Information Management and Technology in an Administrative Register Census.

Strategic Assessment

The feasibility of adopting any technology that is untested in a census environment should be carefully evaluated well in advance. The assessment of the feasibility of using technology, should take into consideration the national context, and in particular factors such as:

- the size of the country,
- the relative costs of the technologies compared to traditional solutions, and
- the work needed to develop and test the technologies, and the potential implications of the adoption of the technologies on the overall organisation of the census operations.

Potential effects on the quality of census results as well as the impact on the general population need to be carefully considered. International cooperation and consultation is a good practice in the decision to adopt a new technology.

Specific IT considerations for Administrative Censuses

As part of the preparatory work, it is necessary to consider the following requirements:

- (a) data collection and transfer – i.e. how data will be transferred from the administrative agencies to the NSO
- (b) data storage – how and when the data will be stored (formats, security requirements)
- (c) data linking - how and where the different data items and sources will be linked together
- (d) storage of metadata or information on processes and products.

Data Collection and transfer

The NSO is dependent on the administrative agencies for the supply of data, and the supply methods. However, it is valuable to consider standardizing the collection/transfer methods. Otherwise, the use of several techniques of collecting and transferring data from administrative registers and data from other sources used in population and housing censuses will require very complex systems and comprehensive data management processes.

The options for obtaining data can include:

- (a) transfer of data sets through a secure ICT channel, by administrative data keepers,
- (b) delivery/receipt of external electronic data carriers containing data files directly by/from administrative data keepers,
- (c) remote access and capturing of data in electronic form, allowing its processing.

The system and data management implications should therefore be carefully considered as part of the data collection strategy.

Secure IT infrastructure is critical. The data (and metadata) must be protected throughout the data collection and transfer process. Regardless of the technology applied, the data collection strategy should ensure information security.

This issue should be taken into consideration at the stage of designing the process of obtaining and gathering data from administrative registers, and designing the proper software and hardware infrastructure. A number of technical issues concerning the coding of data transmission should be considered in detail, together with the use of secure transmission channels.²⁷

Data Manipulation

There are a number of techniques that can be used to automatically convert data from administrative records into statistical data. NSOs need to identify the most appropriate. Experiences from the 2010 Census round may be helpful.

However, it must be stressed that the rules and techniques must be based on the appropriate statistical techniques and principles. Care should also be taken to measure existing errors, and minimize the risks of introducing new errors.

Processing data

Data cleaning tools improve data editing and transformation into statistical records. Modern tools and statistical techniques will also be used to link records and datasets.

Processing of data therefore should follow a carefully prepared set of rules, designed to reflect the required quality levels. The processing systems should be based on specified procedures and processes, with well-tested and documented validation rules and principles. In this step, as with all the other steps of the administrative register based census, it is critical that the process is well documented.

Metadata should be used to steer and monitor the processing of administrative records, including their transformation. Metadata driven systems in all parts of processing operations help to ensure the high quality of census data.

*Outsourcing Considerations*²⁸

The complexity of much of the new software and the infrastructure required to support census projects may go beyond the technical capabilities of NSOs and so it is likely that some NSOs will want to consider outsourcing. External suppliers bring with them considerable experience and expertise that would otherwise be unavailable.

In determining what will be outsourced, it is critical to maintain the trust of the general public. NSOs should carefully consider the following criteria:

- (a) strict protection of data confidentiality
- (b) method of confidentiality assurance that satisfies the general public/key stakeholders

²⁷ This section is based on "Census technology – Draft text for the Conference of European Statisticians Recommendation for the 2020 round", paper presented at the Group of Experts on Population and Housing Censuses, Conference of European Statisticians, September 2014 meeting – http://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.41/2014/mtg1/4_E.pdf

²⁸ For more information see *Conference of European Statisticians Recommendations for the 2020 Censuses of Population and Housing*, http://www.unece.org/fileadmin/DAM/stats/publications/2015/ECE_CES_41_WEB.pdf, pages 34-37 and also *Principles and Recommendations for Population and Housing Census, Revision 3 – Part Two, Section X!! "Contracting out"*

- (c) relevant government policies and procedures, if applicable
- (d) guaranteed measures of quality assurance
- (e) ability to manage and monitor the outsourced census tasks/activities; and
- (f) control over the core competence of the NSO.

Potential candidates for outsourcing

There are a number of potential candidates for outsourcing. While some of these are related to Information Technology and Information Management, others are specialist operational elements. International experiences suggest that NSOs consider the following as candidates for outsourcing in a Traditional or Combined Census

- printing of questionnaires and other field documents/material,
- recruitment and training of field staff,
- publicity campaign,
- translation of field materials into other languages,
- delivery and/or collection/return of questionnaires/field documents,
- design and provision of questionnaire tracking system,
- provision of mapping services,
- primary data capture and coding,
- provision of call centre/telephone help line,
- design and provision of online response technology,
- online/web access design for outputs,
- data storage,
- data editing and/or imputation,
- post-processing questionnaire destruction
- quality assurance, and
- evaluation.

In addition, administrative censuses may also consider the following:

- provision of systems for transfer and receipt of data from administrative agencies
- Provision of systems to support the merging/linking/matching of different sources

The decision to outsource will depend on the requirements of the NSO, including whether the skills are available in-house; and the ability of the NSO to manage complex IT development projects and/or vendors.

Working with Outsourcing suppliers

A clear understanding of requirements is needed before any contracts can be tendered so that these can be specified unambiguously to the contractor. Specifications must allow for the possibility of requirements and objectives changing over the lifetime of the project.

Timetabling, including milestones for key deliverables linked to payment schedules, needs to be agreed with the contractor. Regular monitoring on a routine basis needs to be undertaken at an operational level. In addition, processes should be established to allow senior staff to monitor progress and to deal with any major issues that cannot be resolved at the operational level.

Mixed approach to Outsourcing

A mixed approach to systems development is one in which the overall solution may consist of outsourced systems, systems developed by external contractors working alongside census agency staff, and systems developed in-house. This approach can have many advantages, such as greater flexibility to adapt systems as more is learned through the systems development and testing programme, and the actual census processing operations.

This can lead to improved data quality and savings in processing costs as systems are optimised. However, NSOs will need to be aware that, for such an approach, management becomes much more complex. The NSO must be skilled in the management of complex projects, have a clear understanding of business processes and manage carefully the integration of both the technological and clerical processes.

It is important, therefore, to set up a dedicated team within the Census project to draft and manage contracts, deal with contractors, monitor processes, oversee quality, and liaise with statisticians. Such a team should also have sufficient familiarity with appropriate project management tools. Team-based working, where external contractors work very closely with census agency staff is essential, if this method of systems development is to be successful.

Appendix 3 Budget Items and Skills required for an Administrative Register Census

This Appendix provides information on the common budget items and skills required for an Administrative Census.

Costs of European register censuses in the 2010 Round

This section provides information on costs of a register-based census, based on experiences from European countries in the 2010 Census round.

However, it is important to remember that there are differences in methodologies, register census history and financial management systems. An example in the differences of Financial Management systems is the treatment of Permanent Office staff. European countries typically identify all Permanent office staff working on any part of the census project as a direct cost to the project. However, in GCC countries, only the additional costs associated with permanent office staff will be included in the project budget. Another example relates to taxation. In the case of Europe, all taxes e.g. income tax; social security contributions, sales tax, etc. will be included. In the case of the GCC, some of these taxes do not apply.

Collection methods can also differ. Table 24 below shows the different collection methods for a selection of European countries in the 2010 round. As the table shows, six countries had register only censuses, while another four conducted register censuses supported by full enumeration. A further seven countries conducted combined censuses, with a sample survey component. (Sample Designs for some countries are also shown.)

Therefore, before finalizing budget proposals, it is critical to determine the High Level Design – specifically the planned mix of Administrative and Fieldwork; including the fieldwork sample design.

Table 24 Collection Methods in selection of European countries, 2010 round

Country	Collection Method			Sample Design for Sample Survey ¹
	Register Only	Combined with full enumeration	Combined with sample survey	
Austria			✓	
Denmark	✓			
Estonia		✓		
Germany			✓	10% households (residential addresses) 100% postal survey of Residential buildings 100% of collective living quarters
Finland	✓			
Iceland	✓			
Latvia		✓		
Liechtenstein		✓		
Lithuania		✓		
Netherlands			✓	Uses existing surveys
Norway	✓			
Poland			✓	
Slovenia	✓			
Spain			✓	12% addresses
Sweden	✓			
Switzerland			✓	2.7% annual structural survey Thematic surveys (10,000 – 40,000) Annual Omnibus (special topics) 3,000
Turkey			✓	12.7% of households 100% of collective living quarters
Source: <i>Measuring population and housing. Practices of UNECE countries in 2010 round of Censuses</i> http://www.unece.org/fileadmin/DAM/stats/publications/2013/Measuring_population_and_housing_2010.pdf				
Note 1. Sample design not available for Austria and Poland				

Experience in using the methodology can also impact on the cost of register censuses. The costs of Register based censuses in the 2010 round, shown in Table 25 reflect all these differences.

Table 25 Costs of Register Based Censuses in 2010 round

	Population (million)	Cost USD (million)	Per (USD) Capita	Year of First full Register Census ¹
Register Only Censuses				
Denmark	5.369	0.376	0.07	1981
Finland	5.336	1.281	0.24	1990
Iceland ²	0.300	1.250	4.18	2011
Norway	4.930	2.465	0.50	2011
Slovenia	2.320	0.070	0.03	2011
Sweden	9.434	6.698	0.71	2005
Combined Full Enumeration				
Estonia	1.340	18.735	13.98	2011
Latvia	2.059	10.664	5.18	2011
Liechtenstein	0.035	1.670	47.09	2010
Lithuania	3.039	11.975	3.94	2011
Combined Sample Surveys				
Austria	8.403	13.781	1.64	2011
Germany	81.817	1,043.987	12.76	2011
Netherlands ³	16.240	1.949	0.12	1991
Poland	38.569	136.534	3.54	2011
Spain	46.218	118.318	2.56	2001
Switzerland	7.917	21.297	2.69	2010
Turkey	73.483	13.962	0.19	2011

Sources -Except where noted, information comes from *Measuring population and housing. Practices of UNECE countries in 2010 round of Censuses*
http://www.unece.org/fileadmin/DAM/stats/publications/2013/Measuring_population_and_housing_2010.pdf

Notes

1. The year of the first full Register only Census or Register based census was sourced from relevant NSO websites. In all cases, there is evidence of long preparation times
2. Source: Eurostat Factsheets on Population Censuses in Enlargement countries
3. Uses Existing Surveys

Cost Components

The cost distribution across standard budget items differs significantly depending on the collection method. Table 26 shows the Cost Breakdown by Census Method and Operating Cost component. In this table, the costs for the two types of combined census methods are included together.

As can be seen in the table, Register only censuses incurred costs in four main areas

- Project management
- Data Processing, checking and coding
- Dissemination, Publication and documentation
- Other costs

Table 26 Operating Cost Distribution by Census Methods, used in European countries in the 2010 round

Operating Costs	Register	Combined ¹	Traditional
	(percent)		
Project Management and/or Admin Support	11	13	4
Rehearsal/Pilot		1	3
Development of online Questionnaire		5	2
Printing		2	6
Mapping and other Geographical Support		3	6
Publicity and Promotion		3	3
Field Enumeration		53	54
Data Processing, checking and coding	56	13	13
Dissemination, Publication and documentation	16	4	4
Other Costs	18	4	7
Total (Percent)	100	100	100

Source *Measuring population and housing. Practices of UNECE countries in 2010 round of Censuses*

http://www.unece.org/fileadmin/DAM/stats/publications/2013/Measuring_population_and_housing_2010.pdf

Note 1 Includes both Combined and Full Enumeration and Combined and Sample Survey Methods

Skills and people resources needed for Administrative Register Census

In any census, the proper number and types of personnel are critical. This is particularly the case when transitioning from a traditional fieldwork based census to an administrative register based census.

Traditional censuses require a range and large volume of people. Some of these are specialists or people with specialist skills, such as the specialist skills for preparing maps, IT systems, statistical and methodological processes, designing dissemination systems and tools and designing questionnaires. Other technical and specialist skills are required to process and analyse data. Large numbers of people are needed to manage and implement the fieldwork enumeration.

Administrative register censuses do not need the fieldwork staff, or the staff to organise and manage the fieldwork operations. Rather, they need skilled technical staff to manage data, prepare rules to understand and assess data and work with the administrative agencies providing the data.

Technical staff will be required to complete the activities and tasks described in Section 4. For example, in the Preparation stages (Sections 4.4-4.6), technical staff will be:

- Identifying register sources
- Working with administrative agencies to arrange supply of register sources
- Investigating sources
- Assessing the quality of the different sources
- Preparing linking and matching methodologies
- Linking sources
- Creating statistical registers

- Linking Registers
- Assessing whether the registers meet user requirements

In addition, specialist skills are needed to prepare IT systems, quality systems, dissemination systems and tools and the underlying statistical and methodological processes. Other technical and specialist skills are needed to process, analyse and disseminate data.

The numbers of people required in the preparation of an administrative register based census depend on a number of factors, including

- The census design – including the mix of administrative and fieldwork, and how the design will be implemented
- Quality of individual register sources, along with the associated metadata
- Number of register sources to be assessed
- Number of register sources to be combined
- Linking and Matching requirements
- Extent of Automation
- Skill base of the staff and managers working on the census project

Organisational Structure

There is no single, ideal way to structure a statistical organisation or a census project organization. However, there are some common principles that have developed over time and across countries that can be applied to administrative register based census projects.²⁹

1. A small group of experienced and relatively senior staff should undertake the initial preparation activities (described in Section 3.4.2). This team should be managed by someone experienced in addressing strategic issues and ideally with some experience in censuses
2. The management structure must include an executive level official with accountability for all aspects of the census and with responsibility for the eventual delivery of the census goals.
3. Typically, censuses will be organised as a project, with a clear start and end date. Some countries will have a core ongoing team, which builds up over time and then reduces down once all the core census activities are completed. Other countries will set up a new team at the start of each census project.
4. Each phase of the census cycle should be represented in the top-level management structure.
5. The management structure may include other parts of the organisation responsible for key inputs – e.g. Information Technology, Quality standards, Methodology, etc. If these areas are not directly included in the management structure, then the project structure must ensure that there are appropriate mechanisms to allow these areas to have the appropriate input.
6. While the organisational structure will typically be based around the census phases and responsibility for the technical work, it is also important to consider the cross-cutting activities such as stakeholder management.
7. Project Managers should be allocated responsibilities for key phases or even sub-phases. They may lead project teams from across the statistical office. Depending on the size and scale of the phase, the project managers may need project or management structures.
8. Project teams should be formed reporting to the project managers, with responsibilities for the completion of tasks to the agreed timetable and quality standards, as well as maintaining contact with all relevant stakeholders (including relevant external stakeholders).

²⁹ This draws on the *Handbook on Census Management for Population and Housing Censuses (Census Management-e-GUIDfd30f57d4e0d43f8b4101f1cb3266b7a.pdf)* and *(Census Management-a-GUIDaded58a1b84423e95b25d81f6da8686.pdf)* – Section 4 – Management Structure

9. As preparation work progresses, it should be expected that the teams responsible for preparation will progressively move into operation or implementation responsibilities.
10. The project structure needs to allow and support the evolving nature of the census cycle. Therefore, it is important to recognise that the composition of the management structure will change over the census cycle.
11. Project Boards and Higher Level committees (representing external stakeholders) are a critical part of the operation of the census project. The terms of reference for these forums should be clear. Appropriate representation, including from specialist areas is critical. The Project Board and Higher Level Committee play key roles in the preparation phase. Once the operational phases begin, the committees play less of a governance role, but may still have a key oversight responsibility
12. Specialist technical advisory committees can have a key role in augmenting the experience of the management team and/or project board. The overall approach used in the statistical agency will determine the final review and advisory boards. An administrative register based census should include a technical advisory panel to support decisions on use of different administrative sources and supporting methodology. An information technology panel can also be useful to ensure that the most effective use is made of technology.
13. Specialist technical advisory committees should mainly be used in the preparation phase. Their main role should be to provide advice on strategic issues or particular technical issues.
14. A combined census will also need a field operations structure appropriate to the census design.

Figure 12 presents a model of a generic management structure for an administrative Census project, which draws on these principles.

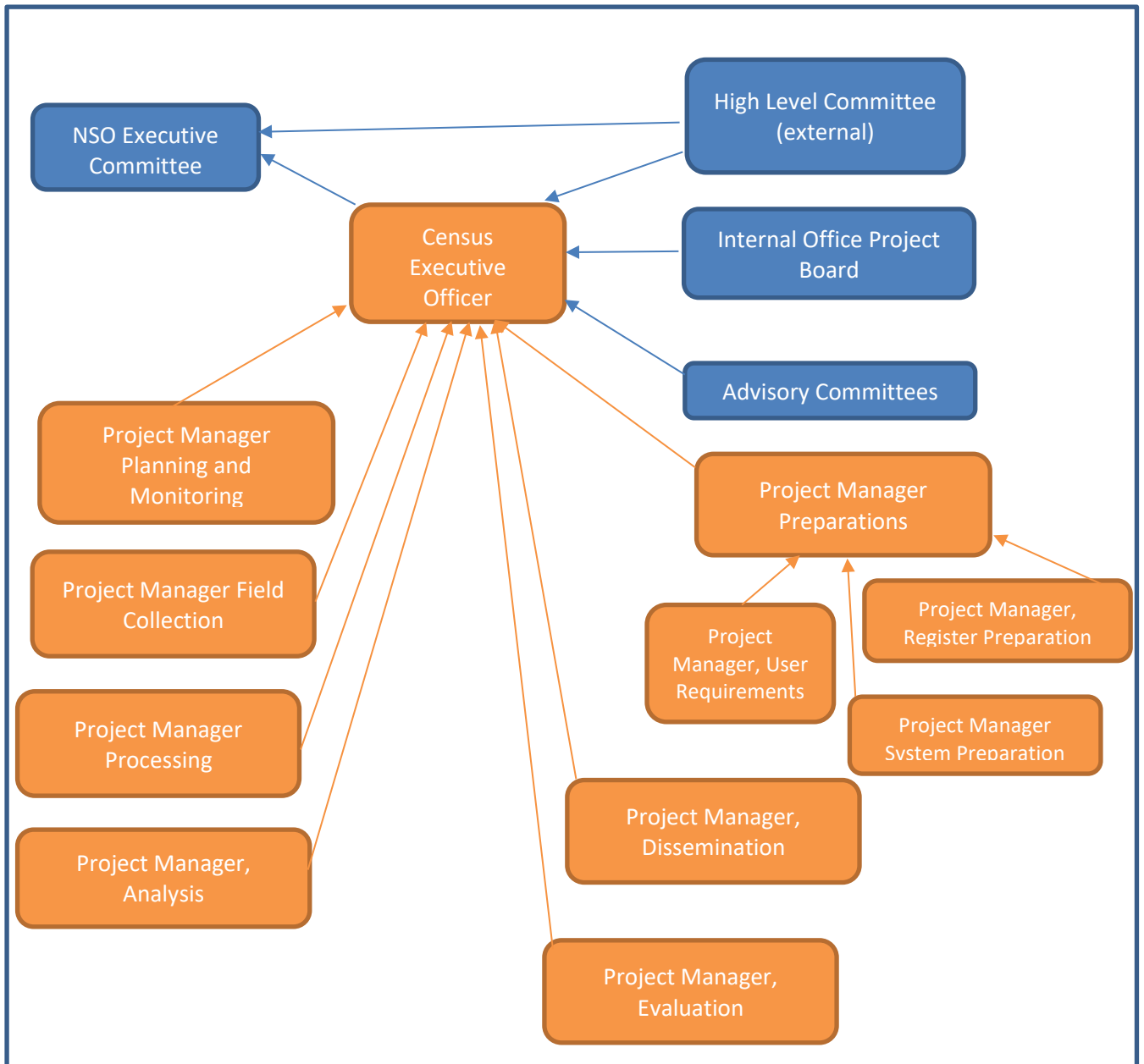
In this model, the project managers responsible for each phase of the census cycle report directly to the Executive responsible for the census project. In addition, the Project Manager, Preparation has a series of project managers responsible for the different key phases, specifically including the preparation of the statistical registers

Different committees operate to support the census Executive manager, and the Head of the NSO who has final responsibility for the Census project.

Throughout the census cycle, some staff and Project Managers will move between phases across the census cycle. For example, the Project Manager User Requirements will subsequently take on the responsibility of Project Manager, Analysis.

Irrespective of the final detailed structure, it is important to be clear about responsibilities and ensure that all phases of the census are being managed and coordinated

Figure 12 Generic Census Management Structure



Appendix 4 Example of Census Plan

This is an example of the country plan for a combined Administrative and Fieldwork Census, following the Objectives, Activities and Tasks set out in Section 4. . It only shows the planning, technical and operational activities. It does not for example show capacity development tasks or contributions to GCC wide meetings.

WBS ¹	Task Name ²	Duration ³	Start (dd/mm/yy)	Finish (dd/mm/yy)
1	Planning and Monitoring	2271 days	Sun 4/1/15	Tue 25/10/22
1.1	Implementation Plan	2271 days	Sun 4/1/15	Tue 25/10/22
1.1.1	Strategic Planning	330 days	Mon 5/1/15	Tue 23/2/16
1.1.1.1	Identify the Strategic Objectives/ Goals	30 days	Mon 5/1/15	Tue 2/10/15
1.1.1.2	Identify the constraints	30 days	Tue 10/2/15	Thu 19/3/15
1.1.1.3	Determine the Success Factors	30 days	Tue 10/2/15	Thu 19/3/15
1.1.1.4	SWOT analysis	300 days	Tue 10/2/15	Tue 23/2/16
1.1.1.5	Determine approach to outsourcing	20 days	Tue 10/2/15	Sun 8/3/15
1.1.2	Project Governance and Organisation	261 days	Sun 4/1/15	Thu 26/11/15
1.1.2.1	Establish Project Governance)	30 days	Tue 10/2/15	Thu 19/3/15
1.1.2.2	Determine resources (people) needed	30 days	Sun 4/1/15	Mon 9/2/15
1.1.2.3	Set up organisational structure and appoint people	200 days	Thu 19/3/15	Thu 26/11/15
1.1.3	Initial Project Planning	70 days	Tue 10/2/15	Sun 10/5/15
1.1.3.1	Prepare Preliminary Planning	30 days	Tue 10/2/15	Thu 19/3/15
1.1.3.2	Initial Risk Assessment	10 days	Mon 27/4/15	Sun 10/5/15
1.1.4	Detailed Planning	30 days	Wed 25/4/18	Thu 31/5/18
1.1.4.1	Prepare Detailed Plan	30 days	Wed 25/4/18	Thu 31/5/18
1.1.5	Project Monitoring and Controlling	2210 days	Thu 19/3/15	Tue 25/10/22
1.1.5.1	Design monitoring processes and procedures	20 days	Thu 19/3/15	Tue 14/4/15
1.1.5.2	Implement monitoring procedures	10 days	Tue 14/4/15	Mon 27/4/15
1.1.5.3	Set up and implement project change control processes	10 days	Tue 14/4/15	Mon 27/4/15
1.1.5.4	Set up and implement risk management processes	10 days	Tue 14/4/15	Mon 27/4/15
1.1.5.5	Prepare reporting templates	10 days	Tue 14/4/15	Mon 27/4/15
1.1.5.6	Provide regular reports	1930 days	Sun 28/4/15	Tue 25/10/22
1.1.6	Project Closure	446 days	Tue 2/6/20	Wed 15/12/21
1.1.6.1	Complete arrangements with supplier contracts	10 days	Tue 2/6/20	Mon 15/6/20
1.1.6.2	Review the project	20 days	Sun 21/11/21	Wed 15/12/21
1.2	Budgets and Approvals	120 days	Wed 25/4/18	Sun 23/9/18
1.2.1	Budgets	120 days	Wed 25/4/18	Sun 23/9/18
1.2.1.1	Prepare High level budget	20 days	Wed 25/4/18	Mon 21/5/18
1.2.1.2	Prepare Business Case	20 days	Mon 21/5/18	Wed 13/6/18
1.2.1.3	Request budget	5 days	Thu 14/6/18	Wed 20/6/18
1.2.1.4	Agreement on 2020 Census budget	10 days	Sun 29/7/18	Thu 9/8/18

WBS ¹	Task Name ²	Duration ³	Start (dd/mm/yy)	Finish (dd/mm/yy)
1.2.1.5	Prepare detailed budget	20 days	Thu 9/8/18	Tue 4/9/18
1.2.1.6	Prepare resource reschedule	35 days	Thu 9/8/18	Sun 23/9/18
1.2.2	Approvals	40 days	Thu 9/8/18	Sun 30/9/18
1.2.2.1	Prepare approvals (e.g. decrees) as required	30 days	Thu 9/8/18	Mon 17/9/18
1.2.2.2	Issue approvals and decrees as needed	10 days	Mon 17/9/18	Sun 30/9/18
2	Initial Preparation	823 days	Tues 31/3/15	Sun 28/1/18
2.1	Confirm intention to conduct harmonised Census in 2020	239 days	Sun 19/6/16	Thu 13/4/17
2.1.1	Scope of Harmonisation	243 days	Sun 19/6/16	Tue 18/4/17
2.1.1.1	Determine country view on harmonisation	30 days	Sun 19/6/16	Mon 25/7/16
2.1.1.2	Agree on scope of harmonisation for 2020 round across GCC countries	2 days	Wed 12/4/17	Thu 13/4/17
2.1.2	Country Intentions for 2020	237 days	Sun 19/6/16	Sun 16/4/17
2.1.2.1	Determine Country intention to conduct harmonised 2020 Census	65 days	Sun 19/6/16	Wed 7/9/16
2.1.2.2	Commitment to conduct harmonised GCC confirmed Census	0 days ⁴	Wed 12/4/17	Wed 12/4/17
2.2	Agreement on adoption of 2020 UN Recommendations and standards in GCC countries	30 days	Sun 19/6/16	Mon 25/7/16
2.2.1	Adoption of UN Recommendations	30 days	Sun 19/6/16	Mon 25/7/16
2.2.1.1	Agree within country on adoption of 2020 UN Recommendations	30 days	Sun 19/6/16	Mon 25/7/16
2.3	All countries to finalise GCC Harmonised data basket	794 days	Tues 31/3/15	Thu 21/12/17
2.3.1	Harmonised Data Basket	794 days	Tues 31/3/15	Thu 21/12/17
2.3.1.1	Determine if proposed data basket meets country requirements	592 days	Tues 31/3/15	Tues 11/4/17
2.3.1.2	Confirm at Census Committee Meeting	2 days	Wed 12/4/17	Thu 13/4/17
2.3.1.3	Confirm through higher level GCC Governance groups	200 days	Thu 13/4/17	Thu 21/12/17
2.4	Agree on the common 'Census date'	794 days	Tues 31/3/15	Thu 21/12/17
2.4.1	Harmonised Census Date	794 days	Tues 31/3/15	Thu 21/12/17
2.4.1.1	Determine if proposed common 'Census date' meets country requirements	592 days	Tues 31/3/15	Tues 11/4/17
2.4.1.2	Confirm at Census Committee Meeting	2 days	Wed 12/4/17	Thu 13/4/17
2.4.1.3	Confirm through higher level GCC Governance groups	200 days	Thu 13/4/17	Thu 21/12/17
2.5	Finalize scope of country specific Census (including country specific data items)	822 days	Tue 31/3/15	Sun 28/1/18
2.5.1	Scope of Census	822 days	Tue 31/3/15	Sun 28/1/18
2.5.1.1	Identify User requirements for the 2020 Census.	150 days	Tue 31/3/15	Tue 6/10/15

WBS ¹	Task Name ²	Duration ³	Start (dd/mm/yy)	Finish (dd/mm/yy)
2.5.1.2	Determine what user requirements will be met from the harmonised basket and where there are any gaps	30 days	Sun 5/3/17	Tue 11/4/17
2.5.1.3	Identify country specific topics required in the census	14 days	Sun 16/4/17	Sun 28/5/17
2.5.1.4	Identify additional data items, specific to the country.	20 days	Tue 2/5/17	Sun 28/5/17
2.5.1.5	Determine subject population for the country specific topics	20 days	Tue 2/5/17	Sun 28/5/17
2.5.1.6	Determine classifications to be used for country specific data items	20 days	Tue 2/5/17	Sun 28/5/17
2.5.1.7	Determine reference periods for country specific data items	20 days	Tue 2/5/17	Sun 28/5/17
2.5.1.8	Determine whether the country census project will include a Census of Establishments	30 days	Tue 4/4/17	Thu 27/4/17
2.5.1.9	Finalise country specific basket items	30 days	Tue 21/12/17	Sun 16/1/18
2.5.1.10	All country basket items, including GCC topics agreed	0 days ⁴	Sun 28/1/18	Sun 28/1/18
3	Initial Technical Preparation	878 days	Sun 25/10/15	Tue 30/10/18
3.1	Assess feasibility of using administrative registers for 2020 Census	688 days	Sun 25/10/15	Tue 6/3/18
3.1.1	Pre-Conditions Assessment	60 days	Sun 25/10/15	Wed 6/1/16
3.1.1.1	Assess if the Pre-Conditions are in place for an Administrative Census	30 days	Sun 25/10/15	Mon 30/11/15
3.1.1.2	Determine how gaps in Pre-Conditions assessment will be filled	30 days	Tue 1/12/15	Wed 6/1/16
3.1.1.3	Pre-Conditions for Administrative based Census in Place	0 days ⁴	Wed 6/1/16	Wed 6/1/16
3.1.2	Identify and Assess possible Data Sources	434 days	Wed 7/9/16	Tue 6/3/18
3.1.2.1	Identify potential administrative sources	20 days	Wed 7/9/16	Mon 3/10/16
3.1.2.2	Access the Possible Register sources	30 days	Mon 3/10/16	Wed 9/11/16
3.1.2.3	Conduct detailed assessment of each potential source	60 days	Wed 9/11/16	Mon 23/1/17
3.1.2.4	Identify how the statistical registers could be formed	20 days	Tue 24/1/17	Thu 16/2/17
3.1.2.5	Identify the likely sources to be used to create the statistical Population Register	10 days	Thu 16/2/17	Wed 3/1/17
3.1.2.6	Identify the likely sources to be used to create the statistical Address Register	10 days	Thu 16/2/17	Wed 3/1/17
3.1.2.7	Identify the sources to be used for Data Basket Items	10 days	Thu 16/2/17	Wed 3/1/17
3.1.2.8	Map data basket items to Potential Sources	30 days	Sun 28/1/18	Tue 6/3/18

WBS ¹	Task Name ²	Duration ³	Start (dd/mm/yy)	Finish (dd/mm/yy)
3.1.2.9	Identify with agencies and Government changes needed to improve the quality or access to administrative records	45 days	Tue 24/1/17	Tue 21/3/17
3.2	Develop legislation change	530 days	Wed 6/1/16	Thu 2/11/17
3.2.1	Legislation	530 days	Wed 6/1/16	Thu 2/11/17
3.2.1.1	Identify where changes to legislation are required	30 days	Wed 6/1/16	Sun 14/2/16
3.2.1.2	If changes are needed, prepare new or changed legislation	200 days	Sun 14/2/16	Sun 23/10/16
3.2.1.3	Work across government to have new or changed law introduced and implemented	300 days	Sun 23/10/16	Thu 2/11/17
3.2.2	SLAs and MOUs	75 days	Wed 1/3/17	Mon 5/6/17
3.2.2.1	Identify entities for SLAs and MOUs	10 days	Wed 1/3/17	Tue 14/3/17
3.2.2.2	Prepare and sign SLAs/MOUs	60 days	Tue 21/3/17	Mon 5/6/17
3.3	Identify Census design (mix of administrative and fieldwork) and support methods and systems	521 days	Sun 15/1/17	Tue 30/10/18
3.3.1	Quality frameworks	150 days	Mon 6/3/17	Sun 9/10/17
3.3.1.1	Identify the approach to quality to be used in the census	30 days	Mon 6/3/17	Tue 11/4/17
3.3.1.2	Confirm the quality methods and frameworks to be used in the census project	30 days	Tue 11/4/17	Mon 5/1/17
3.3.1.3	Prepare Operating Guidelines	90 days	Mon 5/1/17	Mon 21/8/17
3.3.2	Initial Design	40 days	Tue 6/3/18	Wed 25/4/18
3.3.2.1	Prepare Initial List of Topics or parts of populations to be collected using Fieldwork or from other survey sources	10 days	Tue 6/3/18	Mon 19/3/18
3.3.2.2	Create Initial Census Design showing how the administrative census might work	30 days	Mon 19/3/18	Wed 25/4/18
3.3.2.3	Initial Census Design	0 days ⁴	Wed 25/4/18	Wed 25/4/18
3.3.3	GIS requirements	40 days	Mon 19/3/18	Tue 8/5/18
3.3.3.1	Determine Input Geography	20 days	Mon 19/3/18	Thu 12/4/18
3.3.3.2	Determine Output Geography	20 days	Thu 12/4/18	Tue 8/5/18
3.3.4	Usual Residence Methodology	30 days	Wed 25/4/18	Thu 31/5/18
3.3.4.1	Determine how Usual Residence Collection Methodology will be implemented	30 days	Wed 25/4/18	Thu 31/5/18
3.3.5	Data Manipulation Methods	131 days	Sun 15/1/17	Tue 27/6/17
3.3.5.1	Prepare Matching and Linking Methodologies	60 days	Sun 29/1/17	Wed 12/4/17
3.3.5.2	Prepare Prioritisation rules	60 days	Wed 12/4/17	Tue 27/6/17
3.3.5.3	Prepare Methodologies for managing Non-response (including missing values)	60 days	Sun 15/1/17	Wed 29/3/17
3.3.6	IT Requirements	150 days	Wed 25/4/18	Tue 30/10/18
3.3.6.1	Agree on the overall use of IT in the census project.	10 days	Wed 25/4/18	Tue 8/5/18

WBS ¹	Task Name ²	Duration ³	Start (dd/mm/yy)	Finish (dd/mm/yy)
3.3.6.2	Create Initial set of IT requirements	45 days	Wed 25/4/18	Wed 20/6/18
3.3.6.3	Determine the overall IT systems and processes required in the census	60 days	Wed 20/6/18	Tue 9/4/18
3.3.6.4	Confirm outsourcing requirements and determine suppliers/partners.	60 days	Wed 20/6/18	Tue 4/9/18
3.3.6.5	Determine Infrastructure Requirements	45 days	Tue 4/9/18	Tue 30/10/18
3.3.7	Processing Design	45 days	Wed 25/4/18	Wed 20/6/18
3.3.7.1	Design Processing, including Validation	45 days	Wed 25/4/18	Wed 20/6/18
3.3.8	Analysis Design	20 days	Thu 12/4/18	Tue 8/5/18
3.3.8.1	Determine Analysis methods and processes	20 days	Thu 12/4/18	Tue 8/5/18
3.3.9	Dissemination Design	30 days	Tue 6/3/18	Thu 12/4/18
3.3.9.1	Prepare High Level Design showing what will be disseminated, and the main Dissemination methods	30 days	Tue 6/3/18	Thu 12/4/18
3.3.10	Metadata	105 days	Wed 25/4/18	Tue 4/9/18
3.3.10.1	Identify Metadata Requirements for all census phases	60 days	Wed 25/4/18	Mon 9/7/18
3.3.10.2	Determine how the metadata will be prepared and stored	45 days	Tue 10/7/18	Tue 4/9/18
4	Detailed Technical Preparation Administrative Component	739 days	Mon 5/6/17	Wed 18/12/19
4.1	Complete detailed data quality assessments	329 days	Mon 5/6/17	Sun 22/7/18
4.1.1	Detailed Data Quality Assessment	60 days	Mon 5/6/17	Thu 17/8/17
4.1.1.1	Complete Investigation and Assessment of all of the possible Register sources	60 days	Mon 5/6/17	Thu 17/8/17
4.1.2	Statistical Register Creation	70 days	Wed 25/4/18	Sun 22/7/18
4.1.2.1	Establish rules to create registers based on multiple sources	20 days	Wed 25/4/18	Mon 21/5/18
4.1.2.2	Create an initial set of statistical registers and determine if these cover all the required population	20 days	Mon 21/5/18	Wed 13/6/18
4.1.2.3	Create an initial administrative register based census database and identify any gaps	20 days	Thu 14/6/18	Mon 9/7/18
4.1.2.4	Trial Administrative Register Census prepared	0 days ⁴	Tue 10/7/18	Tue 10/7/18
4.1.2.4	Review/Update the initial Census Design following Assessment	10 days	Tue 10/7/18	Sun 22/7/18
4.2	Implement testing programme	244 days	Wed 25/4/18	Mon 25/2/19
4.2.1	Testing	105 days	Wed 25/4/18	Tue 4/9/18
4.2.1.1	Prepare a Testing programme	30 days	Wed 25/4/18	Thu 31/5/18
4.2.1.2	Test all statistical methodologies	30 days	Sun 6/3/18	Mon 9/7/18
4.2.1.3	Test data transfer systems	30 days	Sun 29/7/18	Tue 4/9/18
4.2.1.4	Test data linking processes	45 days	Sun 6/3/18	Sun 29/7/18
4.2.1.5	Conduct pilot tests of integrated Administrative data	30 days	Sun 29/7/18	Tue 4/9/18

WBS¹	Task Name²	Duration³	Start (dd/mm/yy)	Finish (dd/mm/yy)
4.2.2	Finalise Design and Methods	139 days	Tue 4/9/18	Mon 25/2/19
4.2.2.1	Finalise Methodologies	20 days	Tue 4/9/18	Sun 30/9/18
4.2.2.2	Review the Initial Census Design following testing	10 days	Sun 30/9/18	Thu 10/11/18
4.2.2.3	Agree Topics and/or parts of populations to be collected using Fieldwork	10 days	Thu 10/11/18	Wed 24/10/18
4.2.2.4	Refine Census Design	10 days	Tue 12/2/19	Mon 25/2/19
4.2.2.5	Finalise Census Design	0 days ⁴	Mon 25/2/19	Mon 25/2/19
4.3	Prepare IT systems, databases and infrastructure	460 days	Wed 25/4/18	Mon 25/11/19
4.3.1	Initial IT Design	180 days	Wed 25/4/18	Thu 6/12/18
4.3.1.1	Prepare initial design of IT systems	45 days	Wed 25/4/18	Wed 20/6/18
4.3.1.2	Prepare Initial database schema	30 days	Wed 20/6/18	Sun 29/7/18
4.3.1.3	Evaluate Hardware and Software options	30 days	Tue 30/10/18	Thu 6/12/18
4.3.2	Outsourcing	240 days	Thu 6/12/18	Thu 10/3/19
4.3.2.1	Confirm IT outsourcing requirements and determine suppliers/partners	120 days	Thu 6/12/18	Tue 7/5/19
4.3.2.2	Implement Outsourcing arrangements	90 days	Tue 7/5/19	Wed 28/8/19
4.3.2.3	Test outsourcing	30 days	Wed 28/8/19	Thu 3/10/19
4.3.3	Systems and Data base Preparation	375 days	Wed 20/6/18	Thu 3/10/19
4.3.3.1	Prepare data transfer systems	30 days	Wed 20/6/18	Sun 29/7/18
4.3.3.2	Prepare data management systems	90 days	Wed 20/6/18	Thu 10/11/18
4.3.3.3	Build preliminary information technology systems (including databases)	120 days	Thu 6/12/18	Tue 7/5/19
4.3.3.4	Test IT systems and databases	30 days	Wed 28/8/19	Thu 3/10/19
4.3.4	Finalise IT systems	40 days	Sun 6/10/19	Mon 25/11/19
4.3.4.1	Complete Preparation of IT systems (including databases)	40 days	Sun 6/10/19	Sun 24/11/19
4.3.4.2	IT Systems and Databases ready	0 days ⁴	Mon 25/11/19	Mon 25/11/19
4.4	Determine how to evaluate the census results and census project	50 days	Mon 23/7/18	Sun 23/9/18
4.4.1	Statistical Evaluation Approach	50 days	Mon 23/7/18	Sun 23/9/18
4.4.1.1	Prepare approach to Statistical Evaluation	20 days	Mon 23/7/18	Wed 15/8/18
4.4.1.2	Agree on Approach to Statistical Evaluation	10 days	Wed 15/8/18	Tue 28/8/18
4.4.1.3	Identify High Level Requirements for Census Systems, Methods and Operations	20 days	Tue 28/8/18	Sun 23/9/18
4.5	Finalise all operational preparations	20 days	Mon 25/11/19	Wed 18/12/19
4.5.1	Operational Preparations	20 days	Mon 25/11/19	Wed 18/12/19
4.5.1.1	Sign-off tested systems	10 days	Mon 25/11/19	Thu 12/5/19
4.5.1.2	Move final systems into Production	5 days	Thu 12/5/19	Thu 12/12/19
4.5.1.3	Finalise all Operational aspects for 2020 Census	5 days	Thu 12/12/19	Wed 18/12/19
5	Detailed Preparation and Testing - Field work	386 days	Mon 19/11/18	Tue 17/3/20

WBS ¹	Task Name ²	Duration ³	Start (dd/mm/yy)	Finish (dd/mm/yy)
5.1	Complete implementation of the testing programme -Fieldwork	180 days	Mon 25/2/19	Wed 9/10/19
5.1.1	Fieldwork Preparation	25 days	Mon 25/2/19	Thu 28/3/19
5.1.1.1	Prepare Fieldwork Operational Processes	25 days	Mon 25/2/19	Thu 28/3/19
5.1.2	Mapping Preparation	120 days	Mon 25/2/19	Thu 25/7/19
5.1.2.1	Determine how housing units and buildings will be located	20 days	Mon 25/2/19	Thu 21/3/19
5.1.2.2	Determine Mapping requirements	20 days	Thu 21/3/19	Tue 16/4/19
5.1.2.3	Determine how Mapping will be provided	20 days	Tue 16/4/19	Sun 12/5/19
5.1.2.4	Determine and acquire mapping technology	60 days	Sun 12/5/19	Thu 25/7/19
5.1.3	Fieldwork Testing	146 days	Wed 27/3/19	Thu 26/9/19
5.1.3.1	Determine how the Fieldwork components will be tested	5 days	Thu 28/3/19	Wed 3/4/19
5.1.3.2	Design and test Forms	30 days	Wed 3/4/19	Sun 12/5/19
5.1.3.3	Test Fieldwork systems, processes and forms	20 days	Sun 12/5/19	Wed 5/6/19
5.1.3.4	Test data linking processes between Administrative and Fieldwork	20 days	Wed 5/6/19	Mon 1/7/19
5.1.3.5	Conduct pilot tests of Fieldwork or Combined Fieldwork/Administrative data	30 days	Mon 1/7/19	Wed 7/8/19
5.1.4	Finalise Design	10 days	Wed 7/8/19	Tue 20/8/19
5.1.4.1	Review the Initial Census Design following testing	5 days	Wed 7/8/19	Tue 13/8/19
5.1.4.2	Refine and Finalise Census Design	5 days	Tue 13/8/19	Tue 20/8/19
5.2	Prepare Fieldwork IT systems, databases and infrastructure	180 days	Wed 17/4/19	Sun 1/12/19
5.2.1	Finalise IT systems	180 days	Wed 17/4/19	Sun 1/12/19
5.2.1.1	Determine final IT system requirements (including database)	20 days	Wed 17/4/19	Mon 13/5/19
5.2.1.2	Design IT systems	40 days	Mon 13/5/19	Tue 2/7/19
5.2.1.3	Complete Preparation of IT systems (including databases)	90 days	Tue 2/7/19	Wed 23/10/19
5.2.1.4	Test IT systems and database	20 days	Wed 23/10/19	Mon 18/11/19
5.2.1.5	Finalise Fieldwork IT systems	10 days	Mon 18/11/19	Sun 1/12/19
5.3	Finalise all fieldwork operational preparations	379 days	Mon 19/11/18	Sun 8/3/20
5.3.1	Fieldwork Frame and Sample	314 days	Mon 19/11/18	Tue 17/12/19
5.3.1.1	Determine frame for selection of Fieldwork units	30 days	Mon 19/11/18	Tue 25/12/18
5.3.1.2	Create frame	60 days	Tue 20/8/19	Mon 4/11/19
5.3.1.3	Design sample	30 days	Mon 4/11/19	Wed 11/12/19
5.3.1.4	Select sample	5 days	Wed 11/12/19	Tue 17/12/19
5.3.2	Operational Preparations	60 days	Tue 20/8/19	Mon 4/11/19
5.3.2.1	Confirm operational requirements for Fieldwork	20 days	Tue 20/8/19	Sun 15/9/19

WBS ¹	Task Name ²	Duration ³	Start (dd/mm/yy)	Finish (dd/mm/yy)
5.3.2.2	Prepare detailed plans for Fieldwork Operations	30 days	Thu 26/9/19	Mon 4/11/19
5.3.3	Recruitment and Training	220 days	Wed 5/6/19	Sun 8/3/20
5.3.3.1	Recruit Field workers	90 days	Wed 5/6/19	Thu 26/9/19
5.3.3.2	Prepare training material	30 days	Sun 15/9/19	Tue 22/10/19
5.3.3.3	Train trainers	20 days	Sun 19/1/20	Tue 11/2/20
5.3.3.4	Train Field workers	30 days	Wed 12/2/20	Sun 8/3/20
5.3.4	Printing and Mapping	55 days	Tue 17/12/19	Mon 24/2/20
5.3.4.1	Design and print any paper forms	30 days	Sun 19/1/20	Mon 24/2/20
5.3.4.2	Prepare Maps	30 days	Tue 17/12/19	Thu 23/1/20
5.3.5	Publicity and Respondent Support	60 days	Mon 4/11/19	Thu 16/1/20
5.3.5.1	Determine and design publicity campaign	60 days	Mon 4/11/19	Thu 16/1/20
5.3.5.2	Put Respondent Support processes in place	30 days	Mon 4/11/19	Wed 11/12/19
5.3.6	Finalise Operational Readiness	60 days	Mon 4/11/19	Thu 16/1/20
5.3.6.1	Set up Fieldwork Payment system	15 days	Sun 1/12/19	Wed 18/12/19
5.3.6.2	Finalise all Operational aspects for 2020 Census	60 days	Mon 4/11/19	Thu 16/1/20
6	Data Collection	112 days	Tue 17/12/19	Mon 20/6/20
6.1	Complete Census data collection Administrative Census components	112 days	Tue 14/1/20	Tue 2/6/20
6.1.1	Receipt of final data	65 days	Tue 14/1/20	Sun 5/4/20
6.1.1.1	CENSUS REFERENCE DAY	0 days ⁴	Tue 17/3/20	Tue 17/3/20
6.1.1.2	Receive all administrative register sources	60 days	Tue 14/1/20	Sun 29/3/20
6.1.1.3	Review of all register sources	60 days	Mon 20/1/20	Sun 5/4/20
6.1.1.4	All final Administrative data received and reviewed	0 days ⁴	Sun 5/4/20	Sun 5/4/20
6.1.2	Create final statistical registers	47 days	Sun 5/4/20	Tue 2/6/20
6.1.2.1	Create final statistical base registers	20 days	Sun 5/4/20	Wed 29/4/20
6.1.2.2	Create final administrative register based census records	30 days	Thu 16/4/20	Mon 25/5/20
6.1.2.3	Final Administrative Census records created	0 days ⁴	Mon 25/5/20	Mon 25/5/20
6.1.2.4	Update/ Create Metadata	10 days	Thu 16/4/20	Wed 29/4/20
6.1.2.5	Link of Administrative and Fieldwork Census data	5 days	Mon 25/5/20	Sun 31/5/20
6.1.2.6	Upload or Transfer final data	2 days	Sun 31/5/20	Tue 2/6/20
6.2	Complete Census data collection Fieldwork Components	81 days	Thu 23/1/20	Tue 5/5/20
6.2.1	Fieldwork Operations	45 days	Thu 23/1/20	Thu 19/3/20
6.2.1.1	Activate Field Management Operations	20 days	Thu 23/1/20	Tue 18/2/20
6.2.1.2	Load Fieldwork systems and tools	10 days	Mon 9/3/20	Thu 19/3/20
6.2.1.3	Distribute equipment and material	10 days	Mon 9/3/20	Thu 19/3/20
6.2.2	Publicity, Promotion and Respondent Support	40 days	Mon 9/3/20	Tue 28/4/20

WBS¹	Task Name²	Duration³	Start (dd/mm/yy)	Finish (dd/mm/yy)
6.2.2.1	Implement Publicity Campaign	40 days	Mon 9/3/20	Tue 28/4/20
6.2.2.2	Implement Respondent Support (Call Centre)	40 days	Mon 9/3/20	Tue 28/4/20
6.2.3	Fieldwork Collection	34 days	Tue 17/3/20	Tue 28/4/20
6.2.3.1	CENSUS REFERENCE DAY	0 days ⁴	Tue 17/3/20	Tue 17/3/20
6.2.3.2	Collect Data	21 days	Thu 19/3/20	Wed 15/4/20
6.2.3.3	Data Capture of paper forms	10 days	Wed 15/4/20	Tue 28/4/20
6.2.3.4	Create Fieldwork Metadata	10 days	Wed 15/4/20	Tue 28/4/20
6.2.3.5	Collect Final Fieldwork Data, including Non-respondents	10 days	Wed 15/4/20	Tue 28/4/20
6.2.3.6	All Fieldwork completed	0 days ⁴	Tue 28/4/20	Tue 28/4/20
6.2.4	Fieldwork Completion	5 days	Tue 28/4/20	Tue 5/5/20
6.2.4.1	Payment of Field staff	5 days	Tue 28/4/20	Tue 5/5/20
6.2.4.2	Transfer data	2 days	Tue 28/4/20	Thu 30/4/20
6.2.4.3	Close down temporary operations	5 days	Tue 28/4/20	Tue 5/5/20
7	Processing	557 days	Thu 10/11/18	Thu 10/9/20
7.1	All countries to complete all processing of 2020 Census data	557 days	Thu 10/11/18	Thu 10/9/20
7.1.1	Processing Design	130 days	Thu 10/11/18	Sun 24/3/19
7.1.1.1	Agree on Processing approach	20 days	Thu 10/11/18	Tue 6/11/18
7.1.1.2	Prepare Processing Methodologies and Techniques	50 days	Tue 6/11/18	Tue 8/1/19
7.1.1.3	Design Processing Systems	60 days	Tue 8/1/19	Sun 24/3/19
7.1.2	Building and Testing Processing Systems	210 days	Mon 25/3/19	Thu 12/12/19
7.1.2.1	Determine system requirements	20 days	Mon 25/3/19	Wed 17/4/19
7.1.2.2	Build Processing Systems	50 days	Tue 20/8/19	Tue 22/10/19
7.1.2.3	Design Processing databases and schema	30 days	Sun 14/7/19	Tue 20/8/19
7.1.2.4	Test Processing systems	20 days	Mon 18/11/19	Thu 12/12/19
7.1.3	Processing Operations preparation	80 days	Thu 12/12/19	Mon 23/3/20
7.1.3.1	Prepare final Processing systems and databases	20 days	Thu 12/12/19	Tue 1/7/20
7.1.3.2	Determine staffing requirements	10 days	Thu 12/12/19	Wed 25/12/19
7.1.3.3	Determine other operational requirements	10 days	Thu 12/12/19	Wed 25/12/19
7.1.3.4	Recruit temporary staff	30 days	Sun 2/2/20	Tue 10/3/20
7.1.3.5	Train temporary staff	10 days	Tue 10/3/20	Mon 23/3/20
7.1.4	Processing Operations	80 days	Tue 2/6/20	Thu 10/9/20
7.1.4.1	Micro-edit data to identify errors	30 days	Tue 2/6/20	Thu 9/7/20
7.1.4.2	Code text responses	20 days	Thu 9/7/20	Tue 4/8/20
7.1.4.3	Impute missing or invalid data	5 days	Tue 4/8/20	Mon 10/8/20
7.1.4.4	Remove identifiers	5 days	Tue 11/8/20	Mon 17/8/20
7.1.4.5	Weight up data from fieldworks	5 days	Mon 17/8/20	Sun 23/8/20
7.1.4.6	Create derivations and totals	5 days	Mon 24/8/20	Sun 30/8/20
7.1.4.7	Update Metadata	10 days	Sun 30/8/20	Thu 10/9/20
7.1.4.8	Create finalised data files	5 days	Sun 30/8/20	Thu 3/9/20

WBS ¹	Task Name ²	Duration ³	Start (dd/mm/yy)	Finish (dd/mm/yy)
7.1.4.9	Complete final processing	5 days	Thu 3/9/20	Thu 10/9/20
7.1.4.10	Processing Operations completed	0 days ⁴	Thu 10/9/20	Thu 10/9/20
8	Analysis	417 days	Sun 5/4/20	Tue 9/9/21
8.1	Complete full analysis of 2020 Census data	417 days	Sun 5/4/20	Tue 9/9/21
8.1.1	Analysis Preparation	120 days	Sun 5/4/20	Tue 1/9/20
8.1.1.1	Prepare background material	60 days	Sun 31/5/20	Thu 13/8/20
8.1.1.2	Prepare final analysis and macro editing methods	45 days	Sun 5/4/20	Sun 31/5/20
8.1.1.3	Train Analysts in techniques	15 days	Thu 13/8/20	Tue 1/9/20
8.1.2	Macro/Output Editing	90 days	Thu 10/9/20	Sun 3/1/21
8.1.2.1	Check on response or coverage rates	20 days	Thu 10/9/20	Tue 6/10/20
8.1.2.2	Compare 2020 data with previous data	30 days	Thu 10/9/20	Mon 19/10/20
8.1.2.3	Compare 2020 data with other sources	30 days	Thu 10/9/20	Mon 19/10/20
8.1.2.4	Conduct demographic analysis (e.g. cohort analysis)	60 days	Mon 19/10/20	Sun 3/1/21
8.1.2.5	Identify and Investigate inconsistencies	20 days	Mon 19/10/20	Thu 12/11/20
8.1.3	Analysis	210 days	Thu 12/11/20	Tue 3/8/21
8.1.3.1	Understand impact of changes in methodologies on 2020 data	20 days	Thu 12/11/20	Tue 12/8/20
8.1.3.2	Prepare explanations of statistics, including major changes since 2010	30 days	Thu 12/11/20	Mon 21/12/20
8.1.3.3	Prepare analysis reports	180 days	Mon 21/12/20	Tue 3/8/21
8.1.4	Approvals	210 days	Mon 21/12/20	Mon 15/3/21
8.1.4.1	Final statistics for first release endorsed	5 days	Mon 21/12/20	Sun 27/12/20
8.1.4.2	Approval of final statistics for first release	0 days ⁴	Sun 27/12/20	Sun 27/12/20
8.1.4.3	Approval of statistical data for final release	30 days	Tue 8/3/21	Thu 9/9/21
9	Dissemination	1841 days	Wed 2/1/17	Mon 27/6/16
9.1	Dissemination Preparation	1375 days	Wed 2/1/17	Mon 27/6/16
9.1.1	User Requirements	1041 days	Wed 2/1/17	Mon 27/6/16
9.1.1.1	Identify User Requirements	45 days	Wed 1/2/17	Mon 22/8/16
9.1.1.2	Define Detailed Output Requirements	60 days	Tue 20/8/19	Mon 4/11/19
9.1.1.3	Determine specific Products and Services to be disseminated	60 days	Mon 4/11/19	Thu 16/1/20
9.1.1.4	Determine Harmonised Output	5 days	Sun 19/1/20	Thu 23/1/20
9.1.2	Output Geography	50 days	Sun 19/1/20	Thu 13/9/20
9.1.2.1	Finalise output geography requirements	20 days	Tue 25/2/20	Thu 13/9/20
9.1.2.2	Identify output geography products (eg mapping products)	30 days	Sun 19/1/20	Mon 24/2/20
9.1.2.3	Determine how the output geography will be met in different products	30 days	Sun 19/1/20	Mon 24/2/20
9.1.3	Census Output Schedule	35 days	Sun 19/1/20	Mon 2/3/20

WBS ¹	Task Name ²	Duration ³	Start (dd/mm/yy)	Finish (dd/mm/yy)
9.1.3.1	Determine Release Schedule for country level Products	30 days	Sun 19/1/20	Mon 24/2/20
9.1.3.2	Agree on common release dates for release of GCC level aggregates	5 days	Tue 25/2/20	Mon 2/3/20
9.1.4	Disclosure Control	180 days	Sun 19/1/20	Mon 31/8/20
9.1.4.1	Prepare options for Disclosure Control	60 days	Sun 19/1/20	Wed 1/4/20
9.1.4.2	Agree on approach to Disclosure Control	20 days	Wed 1/4/20	Mon 27/4/20
9.1.4.3	Prepare and Test Disclosure Control Techniques and Routines	100 days	Mon 27/4/20	Mon 31/8/20
9.1.5	Prepare Output Tools	150 days	Mon 31/8/20	Mon 8/3/21
9.1.5.1	Design and Build Products and Services	90 days	Mon 31/8/20	Tue 22/12/20
9.1.5.2	Build IT Output Systems	60 days	Tue 22/12/20	Mon 8/3/21
9.1.5.3	Design Final Output Databases	30 days	Tue 22/12/20	Thu 28/1/21
9.1.5.4	Design Output Metadata	20 days	Tue 22/12/20	Sun 17/1/21
9.1.5.5	Prepare Dissemination infrastructure	30 days	Tue 22/12/20	Thu 28/1/21
9.1.6	Approvals	10 days	Mon 8/3/21	Sun 21/3/21
9.1.6.1	Final approvals for release	10 days	Mon 8/3/21	Sun 21/3/21
9.2	Complete the first release of Census statistics	75 days	Sun 17/1/21	Tue 20/4/21
9.2.1	Produce First Release	75 days	Sun 17/1/21	Tue 20/4/21
9.2.1.1	Load approved data into Output systems	5 days	Sun 21/3/21	Thu 25/3/21
9.2.1.2	Produce dissemination products	15 days	Thu 25/3/21	Wed 14/4/21
9.2.1.3	Prepare Output Metadata	20 days	Sun 17/1/21	Wed 10/2/21
9.2.1.4	Prepare final User Support material	15 days	Wed 10/2/21	Mon 1/3/21
9.2.1.5	Disseminate data	5 days	Wed 14/4/21	Tue 20/4/21
9.2.1.6	First release published	0 days ⁴	Tue 20/4/21	Tue 20/4/21
9.3	Complete dissemination of all data	380 days	Mon 5/7/21	Tue 25/10/22
9.3.1	Produce Subsequent Products and Services	80 days	Mon 5/7/21	Wed 13/10/21
9.3.1.1	Load approved data into Output systems	5 days	Mon 5/7/21	Sun 11/7/21
9.3.1.2	Produce dissemination products	60 days	Mon 12/7/21	Thu 23/9/21
9.3.1.3	Prepare Output Metadata	10 days	Thu 23/9/21	Wed 6/10/21
9.3.1.4	Disseminate data	5 days	Wed 6/10/21	Wed 13/10/21
9.3.2	Ongoing User Support and Promotion	305 days	Wed 6/10/21	Tue 25/10/22
9.3.2.1	Prepare final User Support material	50 days	Wed 6/10/21	Wed 8/12/21
9.3.2.2	Promotion of products and services	300 days	Wed 13/10/21	Tue 25/10/22
9.3.2.3	User Support	300 days	Wed 13/10/21	Tue 25/10/22
10	Evaluation	782 days	Tue 28/8/18	Thu 6/5/21
10.1	Evaluation of the census results	782 days	Tue 28/8/18	Thu 6/5/21
10.1.1	Evaluation Design	50 days	Tue 28/8/18	Tue 30/10/18
10.1.1.1	Agree on Evaluation Design	10 days	Tue 28/8/18	Mon 10/9/18
10.1.1.2	Prepare plan for agreed Evaluation Design	30 days	Sun 23/9/18	Tue 30/10/18
10.1.2	PES	692 days	Tue 28/8/18	Thu 14/1/21
10.1.2.1	Design and Prepare PES	60 days	Tue 30/10/18	Mon 14/1/19

WBS ¹	Task Name ²	Duration ³	Start (dd/mm/yy)	Finish (dd/mm/yy)
10.1.2.2	Identify interdependencies and requirements for Census design and operations	30 days	Tue 28/8/18	Thu 4/10/18
10.1.2.3	Build and Test PES	180 days	Wed 15/5/19	Sun 29/12/19
10.1.2.4	Collect and process PES Data	50 days	Wed 15/4/20	Wed 17/6/20
10.1.2.5	Match PES Records with Census records	90 days	Wed 17/6/20	Thu 8/10/20
10.1.2.6	Analyse PES Results	30 days	Thu 12/11/20	Mon 21/12/20
10.1.2.7	Prepare Results	20 days	Mon 21/12/20	Thu 14/1/21
10.1.3	Demographic Analysis	80 days	Mon 21/12/20	Tue 30/3/21
10.1.3.1	Conduct Demographic Analysis	60 days	Mon 21/12/20	Thu 4/3/21
10.1.3.2	Prepare Results	20 days	Sun 7/3/21	Tue 30/3/21
10.1.4	Reporting	30 days	Wed 31/3/21	Thu 6/5/21
10.1.4.1	Prepare and publish Reports of Statistical Evaluation	30 days	Wed 31/3/21	Thu 6/5/21
11	Archiving and Documentation	2271 days	Sun 4/1/15	Tue 25/10/22
11.1	Archiving and Documentation	2271 days	Sun 4/1/15	Tue 25/10/22
11.1.1	Documentation	2031 days	Sun 4/1/15	Tue 28/12/21
11.1.1.1	Establish knowledge management system	60 days	Sun 4/1/15	Wed 18/3/15
11.1.1.2	Prepare documentation	2000 days	Tue 10/2/15	Tue 28/12/21
11.1.2	Census Historical Summary	30 days	Tue 28/12/21	Thu 3/2/22
11.1.2.1	Prepare and Publish Summary document	30 days	Tue 28/12/21	Thu 3/2/22
11.1.3	Archiving Preparation	923 days	Sun 4/1/15	Mon 11/3/19
11.1.3.1	Determine what is to be archived	30 days	Thu 11/10/18	Mon 19/11/18
11.1.3.2	Confirm Archiving legal requirements	30 days	Wed 6/1/16	Sun 14/2/16
11.1.3.3	Agree on Archiving Procedures	90 days	Mon 19/11/18	Mon 11/3/19
11.1.4	Archiving Operations	90 days	Sun 31/5/20	Mon 21/9/20
11.1.4.1	Archive records	90 days	Sun 31/5/20	Mon 21/9/20
11.1.5	Project Completion	240 days	Tue 28/12/21	Tue 25/10/22
11.1.5.1	Complete remaining technical or operational activities	30 days	Tue 28/12/21	Thu 3/2/22
11.1.5.2	Project ENDS	0 days ⁴	Tue 25/10/22	Tue 25/10/22
12	Stakeholder Management	2001 days	Sun 4/1/15	Sun 21/11/21
12.1	Determine stakeholders and confirm information needs	2001 days	Sun 4/1/15	Sun 21/11/21
12.1.1	Stakeholder Management	70 days	Sun 4/1/15	Tue 31/3/15
12.1.1.1	Identify overall census stakeholders	50 days	Sun 4/1/15	Thu 5/3/15
12.1.1.2	Prepare stakeholder management plans	20 days	Thu 5/3/15	Tue 31/3/15
12.1.2	Users	1631 days	Tue 12/4/16	Sun 21/11/21
12.1.2.1	Identify needs for statistical outputs (tables, products and services)	60 days	Tue 12/4/16	Sun 26/6/16
12.1.2.2	Collect feedback from users on outputs	30 days	Wed 13/10/21	Sun 21/11/21
12.1.3	Public Support	2000 days	Sun 4/1/15	Thu 18/11/21
12.1.3.1	communications to maintain public support	2000 days	Sun 4/1/15	Thu 18/11/21

Notes

1. WBS is the Work Breakdown Structure – and shows the code structure for the project
2. The project follows the same order as set out in Section 4. Scheduling includes dependencies. Countries may need to adjust the plan for resource availability.
3. Duration – the total time for the activities and tasks in elapsed working days.
4. Major Milestones, which show when key deliverables are expected or required, are shown with a duration of 0 days. An example of a Milestone as shown in the table is:

WBS¹	Task Name²	Duration³	Start (dd/mm/yy)	Finish (dd/mm/yy)
9.2.1.6	First release published	0 days	Tue 4/20/21	Tue 4/20/21

Appendix 5 References

General

Handbook of Statistical Organization, Third Edition: The Operation and Organization of a Statistical Agency

http://unstats.un.org/unsd/publication/SeriesF/SeriesF_88E.pdf (English) and
http://unstats.un.org/unsd/publication/SeriesF/SeriesF_88A.pdf (Arabic)

GCC-Stat Planning documents

GCC –Stat Roadmaps

<http://gccstat.org/en/calendar/roadmap>

<http://gccstat.org/ar/calendar/roadmap>

GCC Stat Country Implementation Plans for 2015-2017

Proposed 2017/22 plan for the 2020 Census project – presented to the GCC Census Committee
Population Census in March 2015

Project Management

Risk Doomsday Clock http://leadinganswers.typepad.com/leading_answers/2012/06/collaborative-games-for-risk-management.html

Scope Creep -<http://www.businessdictionary.com/definition/scope-creep.html#ixzz3tcb2xKPs>

Six Views of Project Management Software, <http://www.idealware.org/articles/six-views-project-management-software-0>

UNESCO Risk Management Manual 2007,

<http://unesdoc.unesco.org/images/0019/001906/190604E.pdf>

What is Project Management – Project Management Institute <http://www.pmi.org/About-Us/About-Us-What-is-Project-Management.aspx>

Population and Housing Census

2011 Population census framework Factsheets on population censuses in the Enlargement countries (update of March 2013 rev1)-https://circabc.europa.eu/sd/a/aa6b9065-45f5-48f7-9262-0a067584b48b/EU_Enlargement_countries_census_Factsheets_upd-Mar2014.pdf

Australian Census

<http://www.abs.gov.au/websitedbs/censushome.nsf/home/what?opendocument&navpos=110>

Census Planning and Budgeting presentation, 2007

<http://www.unece.org/stats/documents/2007.03.census.html#/>

Census technology – Draft text for the Conference of European Statisticians Recommendation for the 2020 round”, paper presented at the Group of Experts on Population and Housing Censuses, Conference of European Statisticians, September 2014 meeting –

http://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.41/2014/mtg1/4_E.pdf

Conference of European Statisticians Recommendations for the 2020 Censuses of Population and Housing, http://www.unece.org/fileadmin/DAM/stats/publications/2015/ECE_CES_41_WEB.pdf

Post Enumeration Surveys Operational guidelines Technical Report http://unstats.un.org/unsd/demographic/standmeth/handbooks/Manual_PESen.pdf

Handbook on Census Management for Population and Housing Censuses [Census Management-e-GUIDfd30f57d4e0d43f8b4101f1cb3266b7a.pdf](#) (English)
[Census Management-a-GUIDaded58a1b84423e95b25d81f6da8686.pdf](#) (Arabic)

Measuring population and housing. Practices of UNECE countries in 2010 round of Censuses
http://www.unece.org/fileadmin/DAM/stats/publications/2013/Measuring_population_and_housing_2010.pdf

Pre-Conditions for an Administrative Census -
<http://gccstat.org/en/elibrary/publications/gccstat/item/gcc-pre-conditions-for-an-administrative-census-in-gcc-countries>

Preparing for the 2011 Census – Interim Report”, 2007
<http://www.statisticsauthority.gov.uk/publication/report-32-preparing-for-the-2011-census-interim-report-february-2007/>

Register-based Statistics in the Nordic Countries. Review of practices with focus on population and social statistics”, UNECE, 2007
http://www.unece.org/fileadmin/DAM/stats/publications/Register_based_statistics_in_Nordic_countries.pdf

UN Recommendations and Guidelines for Population and Housing Census, Revision 3,
<http://unstats.un.org/unsd/statcom/doc15/BG-Censuses.pdf>

“2011 Modern Census in Poland”. Presentation to GCC-Stat Census workshop, May 2015

Statistical Concepts and Definitions

Basic Survey Design.

<http://www.nss.gov.au/nss/home.nsf/SurveyDesignDoc/5E452BAECB6B6E02CA2571AB0024798C?OpenDocument>

General assessment of age and sex data. in Moultrie TA, RE Dorrington, AG Hill, K Hill, IM Timæus and B Zaba (eds). *Tools for Demographic Estimation*. Paris: International Union for the Scientific Study of Population. <http://demographicestimation.iussp.org/content/general-assessment-age-and-sex-data>.

Generic Statistical Business Process Model, GSBPM, Version 5, December 2013, United Nations Commission for Europe, <http://www1.unece.org/stat/platform/display/GSBPM/GSBPM+v5>.

OECD Glossary of Statistical Terms - <https://stats.oecd.org/glossary/detail.asp?ID=3004>