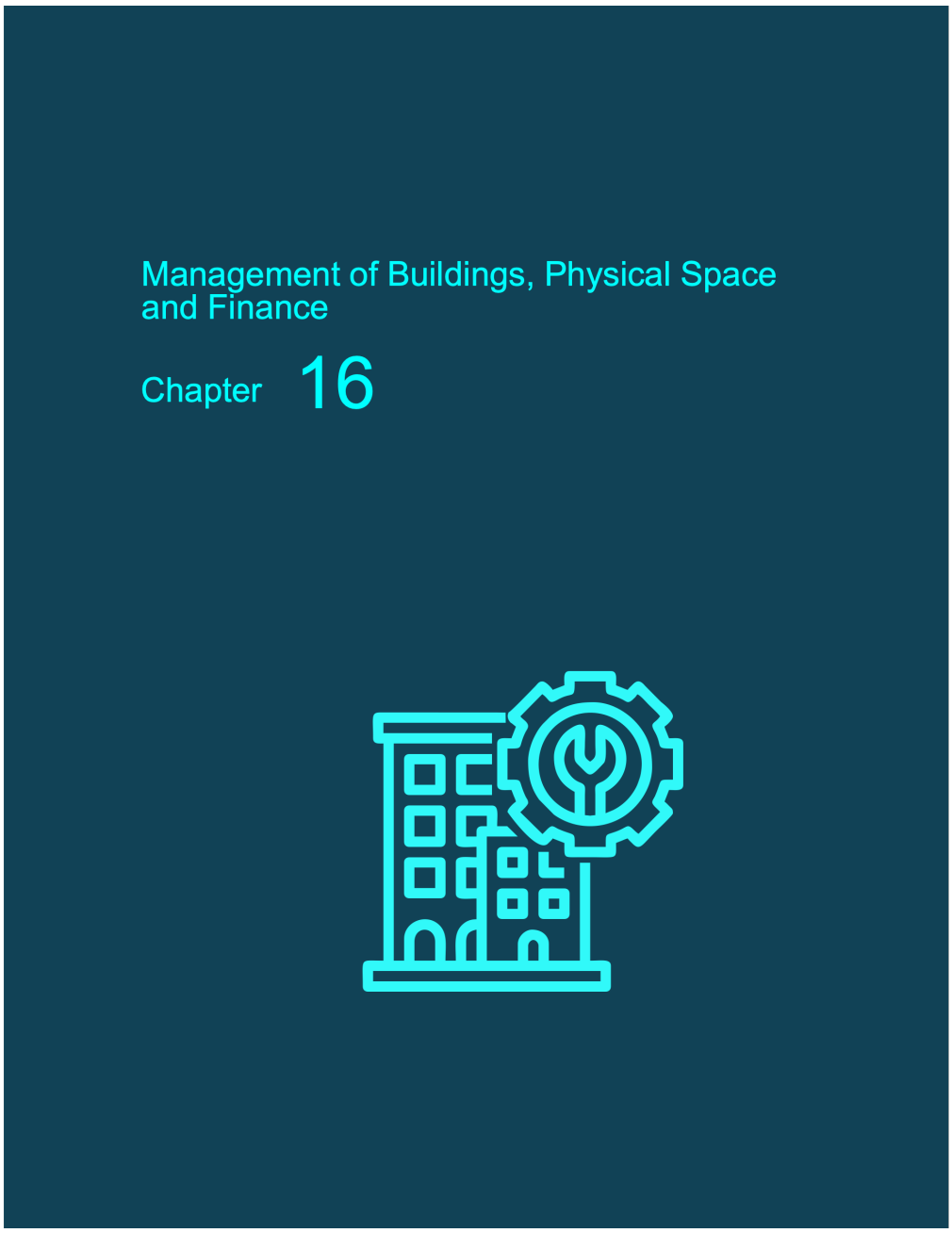
CHAPTER

SIXTEEN

MANAGEMENT OF BUILDINGS, PHYSICAL SPACE AND FINANCE



16.1 Managing environmental, mechanical, and electrical needs

Building management and the management of building-related resources are often closely connected to physical characteristics of building(s). It is in the interest of every national statistical office (NSO) to have a cost-effective building, but the main motive for trying to change the building is usually a lack of space and a desire to consolidate the NSO (or at least a logical set of its organizational units) into a single location. The decision to move to another building is often outside of the NSOs control and is usually taken (or influenced) by a government department that oversees government property. However, a well-organized lobbying campaign can sometimes be helpful, particularly if it includes a solution that includes cost savings or can be seen as beneficial to multiple organizations. As government organizations, NSOs are often located in old spaces that are not suited for the needs of a modern organization, but these can have the advantage of being in prestigious locations that might be exchanged for more space on a less expensive location. Ideally, an NSO should rent, buy or be awarded a building that suits its activities, including adequate meeting places. The building should be cost-effective, have adequate IT infrastructure, and be located in an environment where an adequate pool of potential qualified employees is available. Location in the vicinity of other government offices may also be considered an advantage.

Even though heating, ventilation and air-conditioning, fire-extinguishing systems, electrical utilities and elevator(s) depend on physical characteristics of the building, they should not be taken for granted. These systems must be regularly serviced and maintained to ensure safety during their operation. Maintenance is usually planned and performed according to an annual maintenance plan. Of course, unscheduled repairs cannot be avoided (particularly in older buildings), but regular maintenance, refurbishment and upgrades can minimise such incidents and reduce the long-term maintenance costs.

NSOs' operations impact the environment, and the assessment of this impact can also be beneficial in cost-saving. This assessment should not include only cost-saving measures such as better management of energy (i.e., shutting down the heating, air conditioning and non-essential electricity outside office hours), but also the analysis of possible savings through energy refurbishment (i.e., improvement of the insulation properties, heating/cooling equipment upgrades, and installation of LED lighting). In some cases, an energy-inefficient building could be replaced with a new building, as the cost of refurbishment may be greater than the construction costs. Programmes for improving public buildings' energy efficiency may be available and statistical offices as public institutions would be eligible for refurbishment in such cases. Particular attention should also be paid to waste management, as promotion of responsible practices can significantly reduce both the costs and total environmental impact. Even though that waste management and recycling are heavily dependent on local regulations, awareness, and infrastructure, much can be done at the organization's level. Establishing a waste management plan that includes materials-recovery facilities for recyclable resources and providing open and controlled dumpsites is highly recommended.

Technological advancements in computer hardware have significantly reduced the energy and space requirements for servers. Servers previously required installation into specially designed refrigerated rooms but nowadays can easily fit into relatively small cabinets with integrated cooling. Having an outdated server can incur high electricity costs and at the same time occupy large space that could have been retrofitted for office or other purposes.

- *Office space study: A review from facilities management context* (🔗).

16.2 Managing office space

16.2.1 Managing office layout

The office layout is important because of its impact on the flow of work, the economy of floor space and equipment, employee comfort and satisfaction, and impressions given to visitors. Layout planning is easier and most effective in new buildings. A more common problem is having to layout office facilities in a building that was not tailored to fit a statistical office's needs, where space is often limited, and units must be fitted into predefined areas.

A general recommendation for office space arrangement is to optimise the 'natural' flow of work. This can be done by simulating the daily routines and arranging equipment to minimise unnecessary travel and delays. Organizational units that often cooperate or have related functions should be placed nearby to reduce travel time. Cross-cutting and overarching services, such as data processing or IT, should be placed conveniently near the departments that most often use their services.

> Special attention should also be paid when designing social and meeting spaces, as functional spaces can be particularly beneficial for improving communication, cooperation and well-being.

Revisions of office layout should be carried out whenever a situation calls for a change, usually linked to decreases or increases in personnel. Minor reviews, on the other hand, should be performed at least every second year. The standard tool for the office space review is to regularly calculate, monitor and compare the average amount of space allocated to each staff per surface unit; bearing in mind the recommended space minimums and other specificities, such as placement of specialised equipment, printers, etc.

- The Quick Guide to Office Space Planning (2025) (🔗).

16.2.2 Distribution of offices

As employee satisfaction is one of the most important aspects of any successful activity, managing office space should be handled with particular care. Changes in office arrangements should be carefully planned, announced in advance and swiftly executed (the move should be organized over the weekend if possible). As the public sector has limited opportunity to provide wage increases, having a nice office may be seen as a sign of prestige. Distributing the office space in any organization can easily turn into a major management problem as changes in office layouts can motivate (and demotivate) staff as much as a promotion or demotion.

16.2.3 Open-space

Some statistical offices have introduced open-space layouts, where office areas are divided by as few fixed walls as possible. The arguments speaking in favour of open-space office reduce costs, increased flexibility, collaboration, and teamwork. However, the main disadvantages of open-space offices are the lack of intimacy, noise and distraction.

16.2.4 Hot-desking

Open office layouts are often combined with hot-desking, where workers take whatever desk is available, instead of having one assigned space. These arrangements are particularly useful for organizations, or units within an organization, that can use flexible working arrangements and organize the work so that multiple tasks can be performed remotely. The main benefit of hot-desking is cost reduction as it helps cut down on unnecessary real estate expenses by eliminating the waste of excess space. It is useful for organizations where workers spend much of their time travelling or spend part of the week working remotely and can create an atmosphere of open spaces and freedom. However, besides strong hygiene concerns, hot desking puts rather high stress on employees that like to personalize their working environment and configure their workstation.

16.3 Building security

Since NSOs possess confidential and personal information, they must take building security seriously and restrict not only digital but also physical access to buildings and related infrastructure. The key to managing building security focuses on two main aspects: visitor management and access control (🔗), both of which start at the entrance to the building. Access control can be implemented using electronic devices (such as keys, electronic locks on automatically closing doors or mantraps), ideally combined with surveillance devices such as cameras. The general recommendation is to limit the number of visitor access points and enforce the rule that both visitors and staff must wear identification badges that are visible at all times and visitors escorted by staff. Electronic gates enabling access control are introduced at multiple locations are recommended if finance is available. This also allows structuring the building space into different zones with specific access control depending on the security restrictions needed. For most sensitive areas, to increase the access security, control should be organized with two- or three-factor authentication, which includes:

- something the user knows, e.g., a password, passphrase or PIN;
- something the user has, such as smart card or a key fob;
- something the user is, such as fingerprint, verified by biometric measurement.

  Ensuring the safety of personnel should be a major preoccupation of any manager. Every employee should pass basic safety training (that includes handling a fire extinguisher), and at least one person in each organizational unit should be trained in providing first aid. Evacuation plans should be displayed in every room, evacuation routes should be marked, and evacuation exercises should be performed regularly (preferably at least once every two years). Secure and monitored access to buildings is also important in ensuring personnel's safety, including protecting personal and organizational property.

16.4 Critical statistical infrastructure protection

The production of official statistics is a complex chain of operations. An NSO requires the same critical statistical infrastructure to fulfil its core functions irrespective of its size or capacity. This infrastructure comprises physical space where the NSO is hosted; trained NSO staff with expertise and institutional knowledge; IT infrastructure necessary to manage its computer systems, data maintained by the NSO; and software systems used to store and process the NSO's data. Therefore, an NSO must take necessary measures to ensure the production of statistics can be maintained in the event of any disastrous situation.

16.4.1 The COVID-19 pandemic

The COVID-19 pandemic has created a previously unencountered set of problems. NSOs have tried to organize statistical production in conditions where businesses are less inclined to provide data, where physical contact with respondents is to be avoided to prevent spreading the infection and where remote work is putting huge pressure on IT infrastructure which is a particular problem in developing countries.

  Other issues have arisen during the quarantine such as bandwidth, connection security and remote access, how to organize communication between various parts of the organization, how to ensure attendance of skeleton workforce in the absence of public transport, how to improve motivation for remote work, how to organize childcare and other new challenges.

- UN COVID-19 Data Hub (🔗). This United Nations Department of Economic and Social Affairs resource makes data relevant to COVID-19 response readily available as geospatial data web services, suitable for the production of maps and other data visualizations and analyses, and easy to download in multiple formats.
- Impact of the COVID-19 pandemic on the 2020 census (🔗). The United Nations Statistics Division website provides an overview of the pandemic's consequences in census-taking in the year 2020.

- Official Statistics in the context of the COVID-19 crisis (). This website focuses on the role that official statistics will have to play in the phase of world-wide recovery from the pandemic and the rapid investments and actions needed to properly fulfil this role.
- UNECE launches a platform() to help National Statistical Offices navigate challenges for official statistics during COVID-19 crisis.
- UNECA African System Collaboration Platform () enables teams across the continent to engage with each other and share best practices, methodologies, and guidelines during the COVID-19 crisis and beyond. The platform is designed to be a community of practice to discuss the contemporary issues faced by national statistics organizations.

16.4.2 Climate change

Climate change brings its own set of risks. The Intergovernmental Panel on Climate Change (IPCC) summary for policymakers () lists the following consequences:

Sea-level rise (SLR) SLR is projected to be directly related to the degree of global warming and proximity to the equator. SLR estimates range from 50cm with 1°C global warming up to 1m with 4°C global warming by the 2050s depending on carbon emissions. SLR raises the risk of storm surges, tropical cyclones, and tsunamis, as well as persistent flooding and coastal erosion.

Extreme temperatures Global warming is projected to result in more frequent and more intense episodes of extreme heat. While the marginal impact is projected to be smaller for countries closer to the equator, this comes on top of already high average temperatures for small states in the Caribbean, Pacific, and Africa.

Geotectonic phenomena Countries, especially those within the Pacific Ring of Fire, shall mitigate the impact brought about by disasters such as volcanic eruptions, earthquakes, tsunami and other related geotectonic phenomena.

Particular vulnerability of small island developing states

This risk of such events applies particularly to NSOs in countries more vulnerable to natural disasters and the consequences of climate change, particularly for small island developing states (SIDS). As noted in the IMF policy paper on small states' resilience to natural disasters and climate change (), many small island states are highly vulnerable to storm damage. Some face a difficult future due to sea-level rise. Projections of climate parameters by IPCC and Maple croft's 2016 climate change vulnerability index suggest that countries closer to the equator and low-lying coastal countries (including many small states) are extremely or highly vulnerable to climate change. Roughly three-quarters of low-income countries and one-third of small developing states are assessed as extremely or highly vulnerable to climate change, compared to one-quarter of the rest of the world.

What steps should an NSO take?

Any steps an NSO takes to allay the risks of such natural disasters would normally be part of a wider government disaster recovery programme. It could be argued that official statistics are part of the critical national infrastructure; as such, should be under special protection and covered by appropriate regulations and protocols for disaster recovery and backup and contingency plans to restore a basic setup after any disaster. However, a thorough risk analysis should be carried out by NSOs to identify and quantify the major disaster or climate change risks, their likelihood of realisation, potential impacts, and key vulnerabilities (infrastructures at risk, vulnerable communities and populations).

> This risk analysis should also identify what actions should be taken to mitigate them in the event of a natural disaster. (see *Chapter 6.7 — Risk management*). Logically an NSO should focus on dealing with risks

particular to the NSO itself - examples being large scale server failure, fire in the building and flooding. Actions to mitigate these risks should cover data backup policies, disaster drills and evacuation planning.

Of course, it is one thing to list what actions should be taken and quite another to finance and implement them as they can be very costly and are dependent on appropriate funding outside of the regular operational budget. PARIS21 SIDS – NSDS guidelines (🔗) suggest that small states should integrate risk reduction and disaster response programs into their core budget and debt management frameworks.

As noted in the PARIS21 report 'Advancing statistical development in small island developing states in the post-2015 era' (🔗) there is a need for proper backup in situations when national systems fail, political and security conditions deteriorate, data is lost or unavailable, and/or when personnel are unavailable or have been replaced or transferred. Resources to upgrade much-needed ICT infrastructure (e.g., computers, databases, software) to support statistical work in NSS is beyond the means of several SIDS. This is a serious obstacle to daily statistics work which also hampers communication with data users. NSOs rely on donor support in most cases as part of statistics projects (i.e., census or survey operation) to upgrade their computers and buy new software.

Regional bodies provide support in terms of identification and provision of adapted equipment for use by NSS. In some instances, regional data processing facility is established using pooled resources from country contributions to aid NSS in data processing, analysis, and statistical information storage. The importance of the NSO in providing data during and after a natural disaster should also be taken into consideration. As noted in the UNECE report 'Recommendations on the Role of Official Statistics in Measuring Hazardous Events and Disasters' (🔗), in many countries, the national statistical system's roles in disaster risk management and monitoring of hazardous events and disasters are not clear. The information needs for dealing with hazardous events and disasters are complex and involve many different agencies. Official statistics can meet some needs, but others require different types of information that cannot be provided by the national statistical system. Therefore, clarifying its roles in providing information related to hazardous events and disasters regarding institutional cooperation, integration of statistical and geographical information, and statistical confidentiality, among other issues, is important.

- UN office for Disaster Risk Reduction (UNISDR).
- *UNISDR Small Island Developing States, disaster risk management, disaster risk reduction, climate change adaptation and tourism* (🔗).

16.4.3 Examples

- **Statistics Mauritius**

  Statistics Mauritius has an established data backup system (🔗) of its statistical data as well as business data and website. The frequency of the backup is determined by the level of criticality of the data. Core databases such as labour, prices, trade and demographic statistics are backed up daily. The central source code repository for all core applications is backed up twice weekly. Shared network data files for dedicated units are backed up weekly.

- **St. Vincent and the Grenadines**

  Adoption of the World Bank Caribbean Digital Transformation (🔗) program to improve: capacity, storage and resilience.

- **Suriname**

  Back up methods to deal with possible disasters: The NSO of Suriname (ABS/GBS-Suriname) utilizes different options to back up (🔗) its data.

16.5 Managing finance

NSOs and other producers of official statistics are government-financed institutions, and as such are expected to be transparent and cost-effective in terms of the use of resources. As the main share of the budget is usually related to wages, optimal utilisation of workforce is extremely important even when/where general government considerations determine their level outside of the influence of the statistical office. Issues related to budgetary allocations, optimal strategies to face cost-cutting or ensure additional financing and the ability to gain additional resources by providing services to the market are covered in *Chapter 6.3 — National statistical office as an organization*, while this chapter addresses general issues that are related to finance and cost management that are not covered in other chapters.

16.5.1 Monitoring costs

Some NSOs have set up systems that link statistical activities with costs incurred at each phase of the production process (cost accounting systems). This allows for cost monitoring of statistical activities but also monitoring of costs of each phase. This type of information provides valuable insights into the allocation of budgets and enables evaluation of plans and performance. By analysing the results of cost accounting systems (or ad-hoc estimates), priorities for optimisation can be identified. Further, this type of information makes negotiating for funding easier, as they provide concrete evidence that can be used in negotiations with Ministries of finance or other relevant line ministries.

- Austria statistical office accounting system (regulation and system) (🔗).

16.5.2 Reducing costs

As household survey collection costs correspond to a significant part of the total budget, measures aimed at optimising survey collection (such as hiring surveyors for specific areas of the master sample for a longer period or by reducing the response burden through integration with administrative data) may be used to rationalise the total costs. Costs of software licences can be high, so it may be rational to consider developing a strategy to move the statistical production to open-source solutions. Investing in digitisation may also reduce the long-term cost, as printing many paper forms may be quite costly, however, sometimes digitisation also requires a change in legislation, as in some countries NSOs are obliged by law to use a paper-based collection system.

16.5.3 Managing budgetary difficulties

NSOs may encounter situations in which expenses must be prematurely restricted, due to lack of financial foresight, and often with little regard for the effects of such abrupt reductions. This is generally the case when, just before the end of a fiscal review, the head of financial administration realizes that certain obligations will not be met unless some immediate sacrifice is made. It may also transpire that financial administrators find that the NSO still possesses a considerable portion of its resources at the end of a fiscal review. In such a case, a response might be to find a way to spend these funds to not lose funding for the next fiscal period. However, arbitrary spending can be more harmful than hurried measures to curtail expenditure, leading to poor managerial decisions and waste of the public treasury. Regular monitoring of the expected gaps between expenditures and resources should be taken to prevent such situations. To fulfil this requirement, the financial administration unit must have the information base and the analytical capacity to provide warnings. Effective management often comprises determining and allocating resources where they are needed. Sometimes this includes reallocating resources from areas where they are abundant. Strategies on how to gain additional resources and minimise cuts are presented in *Chapter 6.3.1 — Administrative structure and finance of the national statistical office*.