

## IX. MANAGING THE CORE FUNCTIONS

### A. Essential functions

384. An important question to ask is whether it is possible to define the essence of a national statistical office. Is there an irreducible set of functions that, if not performed by that office, would invalidate its claim to the title of “national statistical office”? Which, if any, of the functions of a national statistical office can be performed by the private sector without compromising the credibility and integrity of government statistics? Chapter IX will address these questions, which are fundamental to any consideration of organization and management.

385. The functions that are commonly attributed to a statistical office include the following:

- Planning
- Executing and processing
- Analysis
- Dissemination
- Coordination and standardization

Each of these functions will be reviewed to determine the extent, if any, to which they can be outsourced.

#### *1. Planning*

386. Planning is the transformation of a policy question or other type of request for information into a series of steps that will result in the desired information being made available within the specified parameters of time, quality and budget. It may be that the actual plan itself is developed outside the Government. This would include decisions on models to be employed, use of over-sampling, stratification and coverage. However, the statistical agency has an inherent role here. As the national statistical agency, it must have credibility and an unbiased professional reputation in order to ensure that the plan is developed without favour to any politician, party or special interest group, and that it is subject to choices based only on the highest professional standards. For example, in many countries the details of a survey plan are carried out by the private sector. However, the expertise and standing of a national statistical agency are necessary to win public confidence in the data collection.

## *2. Executing and processing*

387. Data collection projects are increasingly being executed by the private sector in developed and developing countries. Of course, in many developing countries the execution and processing of data collection activities - census, survey and/or administrative records - was and is often carried out by international agencies. As with the planning function, there is nothing inherent in the execution function that would require it to be carried out by the national statistical agency. As with planning, however, the statistical office plays a key role, which cannot be given to those outside the Government. The national statistical office must ensure that the data collection is carried out in an unbiased way, that confidentiality is assured and that decisions are made only on professional grounds. This is not to denigrate those outside Government but rather to reinforce the principle that a specific role of those within the Government is to uphold the public trust.

388. At this point it is important to consider for a moment the question of confidentiality and how this can be maintained if the government statistical office is not carrying out the execution and processing of the data collection. One of the most important principles of official statistics is that privacy must be respected and the confidentiality of identifiable data maintained. It is the function of the statistical office to ensure this. However, this can be accomplished even if the statistical office does not control the data. For example, a contract written for an organization in the private sector to collect and process data can stipulate that the confidentiality of the data must be protected. These provisions may be very explicit and can incur severe penalties if they are violated. There are cases, in the United States for example, where the legal provisions protecting the confidentiality of data are stronger than some of those for government statistical offices.

## *3. Analysis*

389. Analysis is one of those functions that should be carried out by the national statistical office as well as by those outside the Government. It is important to the intellectual vitality of a statistical office that members of its staff critique the process and models used to produce the data as well as discuss the strengths and weaknesses of the data. This is important for the growth of individual staff members and for the office in its quest to improve the quality of its data. However, it is also important for those outside the Government to do their own analysis. Their work is vital to inform public policy debates and provide critiques that the statistical office can use to make improvements.

## *4. Dissemination*

390. As with other items introduced above, in many countries the private sector is already engaged in the dissemination of statistical data and information. In some cases the products that are disseminated are basic statistical information, and in others the vendor provides a value added service. This service may be to conduct further analysis of the data or integrate the data with other information. What then is the role of the statistical office? While a statistical office may not disseminate all statistical information

(it may not even be the primary source), it does have an obligation to ensure that fundamental statistical information is provided to all segments of the society on an equal basis. Depending on national practices, the statistical office may provide the information itself, or it may assist the private sector in providing the information. This principle holds despite differences of opinion (presented in chapter XI, section 3) on whether statistical information is to be provided at the marginal cost of dissemination or whether it is permissible to provide some statistical products at market rates. While the private sector may be used as a vehicle for the dissemination of statistical information, the national statistical office has an obligation to ensure, either directly or through others, that statistical information is disseminated.

### *5. Coordination and standardization*

391. In this last area, there is general agreement that this is uniquely a government function. This is true whether coordination is between other functional ministries or decentralized statistical agencies. It would simply not be possible for a non-governmental agency or the private sector to accomplish this kind of coordination. To do so would unalterably blur the lines between governmental and non-governmental activity and change the very definition of Government. For similar reasons it would not be possible for anyone but the national statistical office to participate with others in the international statistical system in the development of global standards. No one outside the statistical agency could lay claim to an unbiased position or would have its credibility.

#### *B. Surveys and censuses*

392. Even when a statistical system is substantially decentralized and a powerful public sector body - for example, the economic policy division of the ministry of finance - is in charge of the compilation of key economic statistics, the expected pattern is for the statistical agency to be in charge of taking most or all surveys. The reason for this practice is partly historical. An office in charge of the census of population that continues to operate after the census activities are complete has the capability to undertake surveys. In most countries, survey-taking is regarded as a fairly technical and specialized activity, but it lacks the prestige that might make other agencies want to incorporate it into their own programs. Moreover, other agencies would not have the appropriate infrastructure to take it over.

393. While statistically not a “survey”, the census is obviously the flagship product of statistical offices when it comes to their capabilities in survey-taking: a census is complex, costly, visible, politically significant and/or sensitive and has to be completed within strict timeframes. Therefore, good management of the census is critically important.

394. Many materials are available that deal with the management of a census of population, including detailed reports on actual experiences of census-taking.<sup>80</sup>

395. Census and survey data are complementary in a statistical system. Data from surveys are usually more complex than the basic data collected through a census. Survey data are often used to expand on the characteristics of census topics (plus additional topics) and to measure change between censuses. Census information on small area populations is used to design sampling frames and selections for the survey units. While survey programmes may collect different information from the census, several topics are usually common to both. Therefore, to maximize the use of the data from both sources, it is important to standardize concepts and definitions for these common topics.

396. Of the three kinds of data collection - ongoing recurrent routine surveys (e.g., the monthly CPI and the monthly or quarterly labour force survey), ad hoc new surveys of some complexity and, last but not least, censuses - the ad hoc surveys and censuses demand particularly strong management methods. The modality that is favoured these days is “project management.”

### *1. Project management*

397. The idea owes much to the construction industry, which adopted the project management approach long ago to carry out complex projects. Like a civil engineering or construction project, a statistical survey is carried out over a long period of time, and it requires, throughout the process, active participation on the part of representatives from a variety of disciplines within an organization.

398. The creation of a project follows a recognizable pattern: the statistical agency recognizes a priority and decides to embark on a survey; the subject matter unit (department, division, branch) best suited to head up the initiative is given the budget and the leadership role (and, one would hope, a schedule and limits on expenditure, content, and maximum inflexible response burden); and a project leader is appointed and proceeds to subcontract with internal, and at times external, providers of the services required to carry out the survey.

399. The internal providers of surveys are referred to in this chapter as the various “capabilities” that must be built into a moderately-sized statistical agency. For very small offices, one officer would possess several of these capabilities.

400. The survey capabilities include several units: one in charge of relationships with respondents; another in charge of such areas as survey design, field operations, estimation

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<sup>80</sup> The United Nations Statistics Division has developed a series of handbooks and guidelines to assist countries in their preparation for the 2000 and future census rounds. These include *Principles and Recommendations for Population and Housing Censuses, Rev. 1* (United Nations publication, Sales No. E.98.XVII.8), *Handbook on Census Management for Population and Housing Censuses* (United Nations publication Sales No. E.00.XVII.15, Rev. 1); *Handbook on Geographic Information Systems and Digital Mapping* (United Nations publication, Sales No. E.00.XVII.12); *Handbook on Population and Housing Census Editing*, United Nations publication, Sales No. E.00.XVII.9; and *Collection of economic characteristics in population censuses: technical report* (ST/ESA/STAT/119, forthcoming).

and evaluation; and one that is ultimately responsible for launching and operating the survey once it is prepared.

401. Apart from common sense, an indispensable element of any form of project management, several widely used techniques, including supporting software, are available nowadays to help project managers run a project. One example is the critical path method (CPM), a procedure for using network analysis to identify those tasks that are on the critical path and for which any delay in completion will lengthen the project timescale unless action is taken. For all tasks off the critical path, a degree of tolerance is possible (e.g., late start, late completion, early start). Critical path analysis and network charts used to be produced by hand. However, software is now available that requires the user only to enter the tasks, their duration and their dependencies upon other tasks; a network chart and critical path diagram are then automatically created. Decision trees are another excellent tool for making financial or number-based decisions for which a lot of complex information needs to be taken into account. This tool provides an effective structure in which alternative decisions and the (quality) implications of taking those decisions can be identified and evaluated. They also help to form an accurate balanced picture of the risks and rewards that can result from a particular choice.

402. If a statistical agency is big enough - and the project of sufficient duration - to support a multidisciplinary project, formally constituted with a proper mandate and well-defined objectives, the responsibility will probably be delegated to a steering committee. Such a committee is expected to include the principals of the various disciplines represented on the project team as well as anyone else who can assist in formulating policies for the project and assessing whether it requires a change in direction or in terms of reference. The steering committee should be able to meet as often as the project manager requires but should not meddle in the day-to-day operation of the project (quarterly meetings may be an acceptable norm). In the case of very important projects, the chief statistician may choose to sit on the steering committee, but not necessarily as its chairperson.

403. The creation and operation of projects involves a certain discipline, which takes some time to acquire. There is a difference between the routine operation of an organization and the development of an organization's functions or activities. Projects are concerned with the latter.

404. Whereas the existing hierarchy - i.e., chiefs and, directors - is accountable for the ongoing management of the organization, the project manager's accountability is limited to the duration of the development of the project. Once the development stage is over, the project manager hands over the project and project team and disappears as an organizational entity.

405. The project manager is appointed for a finite period and receives the project objectives from the chief statistician (or a delegate), including specifications for the characteristics of the measuring instrument, a schedule and a budget.

406. In theory, the project manager could be selected from a hierarchical level inferior to that of other members of the project. In practice, this is not done, simply because it creates a gap that might impede the freedom of action that the project manager requires.

407. For their day-to-day activities, the other members of the project will work outside the authority of their usual chain of command, taking instruction and guidance from the project manager. If the project team members' superiors wish to intervene, or even to make inquiries, they should communicate with the project manager.

408. The list of disciplines represented on any project will of course vary with its nature, size, and complexity. The planning list for the census of population can be used as a checklist for what is required in any project. Thus, even a moderately sized project will include supervisors of questionnaire design, content definition, sample design, supporting computer systems, fieldwork, respondent relations, project finances and internal communications.<sup>81</sup>

409. The specialized knowledge required for development purposes will be supplied by the project team members. Their leader's primary task is to ensure that the plan to meet objectives has integrity; that adjustments to the plan take place whenever circumstances warrant; that there is no over-expenditure of resources; that members of the team keep each other properly informed; that there is no duplication of effort; and that there is working machinery to settle conflicts and differences of opinion. While it may be helpful, it is not necessary for the project team leader to be an expert in the subject of the project. The ideal team leader of an ad hoc project team would be proficient in the subject matter, knowledgeable about management techniques such as budgeting and critical path analysis, an excellent communicator and able to empower others and generate trust among the team members. Of course, finding anyone with all of these abilities and skills is virtually impossible. Therefore, while realizing that all of these abilities and skills are important, the issue in choosing a team leader is to decide which are more important than others. This is often a matter of judgement, but, for example, it is probably wiser to choose someone strong in management but weaker in substantive skills than the reverse. The team leader should be a first-rate coordinator, manager and diplomat, methodical and well organized, and inventive but not excessively prone to risk-taking. It is important, however, that the team leader not be devoid of substantive skills lest he/she become a target of ridicule owing to excessive ignorance of the subject covered.

410. Discipline must above all be imposed on the organization's established hierarchy. It should not interfere with the project manager either directly, or through attempts to give the project team members guidance in addition to, or in opposition to, that given by the project manager.

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<sup>81</sup> Very few projects, with the exception of the census, have the need, time or resources to document their own history and negative experiences. However, without a tradition of documenting experiences, a project cannot benefit from previous successes and failures. Oral history, though sometimes helpful, can also be a means of miscommunication through anecdotes and distorted recollections.

## *2. Working with project staff*

411. In any project leading up to a survey, from design onward, the project manager will be required to deal with staff operating from at least three very different perspectives. First, there are the subject matter staff, who interact with users; transform user problems into measurement projects; and are in charge of evaluating the survey results and interpreting them on behalf of the user. Their perspective is driven by the notion that surveys should yield statistics that inform the user on particular problems. In fact, for subject-matter statisticians, the rewards are derived from having successfully met the expectations of users. This is true even if there is no strong dividing line between users and respondents.

412. Second, there are the survey statisticians,<sup>82</sup> whose function is to ensure that the measurement has the right quality attributes. Their task is to ensure that if there is bias in the measurement it is understood; that the inferences are only those that are supported by the data; and that the methods used stand up to scrutiny and are properly documented and accessible. The community that survey statisticians interact with is one that is primarily interested in methods, rather than in the result of any particular project. The rewards come from that same community, mostly academic and devoted to theoretical and applied research.

413. Third, there is the field organization, the particular arm of the statistical agency that contacts respondents, and promptly and courteously deals with any complaint arising from lack of clarity or excess burden.

414. These three groups (in simple cases, they could be three people) will embody different points of view and have different priorities. The subject-matter experts will be largely concerned with speed (as they are the ones who look after the budget) and with the relevance of the results to the issue that provided the impetus for the survey. The survey statisticians, acting as the statistical conscience of the agency, will be most concerned with the integrity of the selected sample and with consistency in the administration of the survey interview. And the field organization will insist that good will must not be abused, regardless of the importance of a particular survey.

415. Usually, these three perspectives yield lively discussion in the course of any project and at times create tensions, which must be alleviated. There are a few “do’s” and “don’ts” that should be made clear if the project management process is to go forward productively and efficiently:

- The project manager was chosen because he/she had the confidence of the agency’s management and should therefore be neither second-guessed nor overridden. If his/her performance does not inspire confidence, a replacement should be made;

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<sup>82</sup> The term “survey statistician” mentioned here is used as synonym for mathematical statisticians. It comprises those statisticians normally responsible for such tasks as the design of a sample and the estimation of the results together with the sampling error.

- Project team members should not lobby their respective organizations to challenge the project manager's decisions. Only one entity can be accountable and granted decision-making authority;
- Compromise is essential. Most decisions will reflect compromises and will vary according to the relative importance of each of the different perspectives – subject-matter, statistical, respondent - at different stages in the history of a project;
- Vesting the power of taking decisions in the project manager does not imply that he is all-knowing and infallible. All members of a project should be encouraged to seek advice, particularly when arguments appear to be finely balanced.

416. In order to make the project manager's job viable there has to be an ongoing dialogue among all members of the project. If balance is lacking between the understanding brought to bear by survey statisticians and the subject-matter body with which they interact, there may be a serious management problem for the project with, at times, wider and unfortunate repercussions.

**Box 13. Typical problems experienced by project teams and created by different perspectives**

*Internal Perspectives*

For the purpose of this example, let us assume that a project manager is in charge of an initiative designed to measure the environmental impact of the packing of consumer goods (e.g., whether recyclable materials are used; how packing waste is disposed of; the impact of public sorting devices on the disposal of waste). The most efficient use of the statistical agency infrastructure is to have this new survey accompany the existing labour force survey and begin the interview with survey questions on the environmental impact of the packaging of consumer goods. This approach would be efficient, as the environmental survey is shorter than the labour force survey. However, the environmental survey requires the respondent to keep a diary, which may affect the willingness of the respondent to cooperate in the labour force survey. The head of the field organization knows that his performance will be judged most of all by his ability to carry out the labour force survey and that success with this new survey is secondary. Accordingly, in this hypothetical situation, he/she argues that the preferred option is to keep the new survey separate, and if there were good reasons not to proceed in this fashion, then the survey would be kept only as an add-on, to be administered after the labour force interview is successfully concluded. Both options, though preferable in the eyes of the field organization, are inefficient from the point of view of the project manager. The first is too costly; the second runs the severe risk of increasing the non-response rate beyond the limits imposed. The project manager is clearly in charge of a limited initiative. However, interaction with a service provider that takes a broader perspective is bound to produce conflict and call for a higher level of mediation.

*External perspectives*

In this example, a ministry of tourism asks the statistical office to conduct a survey on the number of tourists arriving and departing and on their related expenses during their stay. The ministry of finance, responsible for balance of payments statistics and conscious of the fragility of the travel account in the balance of payments as well as that account's importance in explaining fluctuations in the current balance, supports the request and offers to co-finance the survey.

The project manager in this hypothetical situation loses many nights' sleep because the two sponsoring agencies cannot agree on the possible interpretations of the priorities listed as part of their contract with the statistical agency. The statistical agency, anxious not to forego an important opportunity, agreed to formulations

that turned out to be too vague and did not specify a protocol for how the sponsors should behave during the execution of the project. As a result, and in spite of the fact that the statistics on tourism improved, both the ministry of tourism and the ministry of finance feel that their goals have not been met; neither ministry has much faith in the technical competence of the statistical agency, although both agree that it treated the results with moral integrity; and no party has the energy or the resources to make another attempt, even though the survey sample was limited in size and scope.

To avoid a conflict such as this one, the statistical agency should (a) attempt to lay out all the “don’ts” it should have learned from the first exercise; (b) demand an agreed-upon list of objectives in line with the budget; and (c) above all, insist on a commonly agreed-upon definition of the goals of the project.

### *3. Working with respondents*

417. Part of survey capability consists in an established relationship with respondents, which comprises a way of (a) finding them; (b) explaining to them why they should be willing and truthful respondents; (c) persuading them to comply, without necessarily threatening them with legal actions; and (d) dealing with complaints in cases where surveys are too lengthy, unclear and continuous. Naturally, none of this is attainable without a survey organization that includes a respondent relations department, entrusted with the following duties:

- Handling the public relations required for potential respondents to understand why they have been selected, what is asked of them and what is the public good that is served as a result of their cooperation;
- Exercising special care and taking all the required precautions in cases where the announced survey is either unusually long (for example, surveys of family expenditure) or unusually intrusive (for example, surveys of harmful drug consumption and surveys of fertility);
- Keeping a register of respondents contacted and survey interviews completed so that recalcitrant respondents can be identified and persuaded to participate;
- Sharing information with respondents, so that they feel not only that they have made a contribution to the public good but that there is some personal benefit as well;
- Having the resourcefulness, presence of mind and necessary information to find alternative respondents when there is strong resistance to the survey or when the original respondent can no longer be located.<sup>83</sup>

418. Accomplishing these tasks requires tact and diplomacy, together with firmness and determination. There will always be people in either the household or the business sector who will refuse to comply, no matter how good a case for cooperation has been put

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<sup>83</sup> Strict methodological guidelines should be in place to ensure that such replacements do not compromise the propriety of the original choice.

forward. This situation cannot be avoided and the officer-in-charge should not assume personal responsibility for a small percentage of such cases. However, if the rate of refusal appears to be increasing, procedures and methods should be examined, for this may reveal a serious inadequacy in the methods adopted.<sup>84</sup>

#### *4. Repository of statistical expertise*

419. A statistical agency must have the following capabilities if it wishes to be recognized as the repository of statistical expertise and the rightful custodian of the official national statistical infrastructure:

- The capability to design a comprehensive survey that takes into account sample selection, survey design, estimator choice, estimation method, and calculation of variances and sampling errors;
- The capability to design a questionnaire with properties that minimize the respondent burden while recognizing the importance of minimizing cognitive errors that could arise from lack of clarity in the questions;
- The capability to relate collected information to concerns that drive users to solicit information from the statistical agency;
- The capability to analyse information that has been collected (and is about to be disseminated) so as to maximize its informative role.

420. These capabilities must be held by some part or parts of the organization. Logically, the more technical capabilities - sample survey design, estimation techniques, and advice on drafting and questionnaire layout - should be the responsibility of one organizational unit, in order to promote coherence in the agency's survey activities. Questionnaire content and substantive processing of the information collected should be the responsibility of another part of the organization. Designating responsibility for analysis of survey results is largely dependent upon the availability of analysts and on the way in which the statistical agency cooperates with outside specialists. Conventionally, all issues relating to content - interaction with users, determination of the schedule for data collection, financial arrangements to support the initiative (particularly if sponsors are involved), and tabulation and accompanying analysis - have been the domain of the subject-matter staff. Finally, the field organization is charged with the responsibilities of establishing contacts with respondents and ensuring that they react favourably to the initiative and provide the right kind of information.

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<sup>84</sup> Failure to address the respondent in his/her language, or with the accent or intonation prevalent in the region or province, could ruin the chances of success for even the most unobtrusive of surveys. Excessive zeal in pursuing recalcitrant respondents in a small community can just as easily ruin a survey conducted in the area.

### *5. Flexible survey-taking capability*

421. It is commonly alleged (and there is truth behind the allegation) that statistical agencies are slow in reacting to requests for vitally important information. In fact, the lags involved in responding with hard information, particularly information that includes a measure of the rate of change, are aggravated by the typically vague formulation of the requests. Such undertakings do take considerable time, but while the lags can be accounted for and seem natural to fellow statistical practitioners, it can be difficult for users to understand why it takes so long to conduct a survey and disseminate the results. To respond to such ad hoc challenges, a valuable survey-taking capability of statistical offices can be provided by a unit that is able to mount a quick survey, either as a first instalment on a more permanent effort, or as a one-time exercise.

422. One way of deploying such a unit is to assign to it the responsibility of all feasibility tests in a statistical agency, so that its staff becomes accustomed to launching quick efforts designed to settle basic questions, preceding what might be a more substantial survey. The mission of this unit might be to survey a given number of respondents (households, businesses or people in Government or in public institutions) in a set amount of time (e.g., a maximum of sixty or ninety days). By developing such a capability and periodically demonstrating its power and scope, an office could greatly increase its credibility and gradually establish pre-eminence in the field of statistics

### *6. Administrative records*

423. A statistical agency should not automatically initiate a new survey in response to every demand for information. Rather, it should systematically attempt to react to new demands by exploring how they might be satisfied using regularly collected data or, failing that, by examining whether the administrative records already in the hands of the Government can address the new request, at least to some degree. Whether or not, or rather to what extent administrative records can be used to replace or to supplement statistical survey information, is a very complex issue and the answer also depends very much on specific national situations. Statisticians tend to be wary of the quality of administrative information, in terms of concepts and coverage.

424. Nevertheless, the attractive feature of administrative records is that they are to be collected or have been collected anyway. It is probably true in many countries that some administrative records, such as tax records, have a very good coverage of parts of the population, and that the rate of response is substantially better than that achieved by a statistical agency. Moreover, there is always the possibility of improving on the information yielded by those records by supplementing them with data obtained from a much smaller sample of respondents.

425. If these advantages are recognized, it follows that some part of the statistical agency, preferably one that is set up alongside the field organization, should have staff charged with the following responsibilities:

- Keeping abreast of administratively collected data held by other parts of the Government;
- Evaluating each new request to determine the extent to which it can be met without resorting to a new or expanded survey;
- Negotiating with the custodians of the relevant information to determine how it can be shared within the legal framework imposed on government information activities.

### **Conclusions**

A statistical system requires the ability to carry out censuses and surveys. This capability is based simultaneously on doing what is necessary to carry out regular surveys and on having the people, techniques and organization required to develop a new survey instrument and deploy it successfully. The chief statistician must also give careful consideration as to which, if any, core functions should be outsourced.

The most effective organization for managing large incidental surveys is that of the multidisciplinary project, in which, under a specially appointed project manager, the organization's service providers contribute their resources proportionately.

The project manager must interact with the service providers. At times there will be obstacles, partly owing to different perceptions of what constitutes success and partly to various opinions on the best way to solve problems. In designing the organizational framework for development projects, the chief statistician will take those obstacles into consideration and will establish a pre-emptive conflict-solving mechanism.

Usually the project manager will report to a steering committee, an ad hoc organization called upon to assist in interpreting and, if necessary, changing the project's terms of reference.

In addition to capacity for the execution of a regular survey programme, it is advisable to develop a rapid response capability in order to show sensitivity to emerging ad hoc requirements, while continuing to exercise discretion before committing to costly and cumbersome surveys. Access to administrative records at all times is desirable, not only to promote rapid response, but also to preserve the good will of potential respondents.