XIII. PUTTING IT ALL TOGETHER

563. The preceding chapters have examined all of the functions required for a statistical agency to perform effectively. Clearly, one of the most important points is that the activity of a statistical agency is constantly under conflicting pressures. Prudence and experience suggest that there is no ideal solution, but an effective model seeks to minimize the impact of negative elements rather than assume that they can be eliminated. Another major point is that most of the features covered so far apply to all statistical agencies, whether centralized, in the research departments of central banks or embedded in ministries that rely heavily on quantitative evidence. The present chapter brings all of the elements together into a schematic framework, further illuminating some of the arguments reviewed above. Chapter XIII also intends to strengthen the understanding that all parts of a statistical agency are interrelated and that the agency cannot work effectively without a sense of interdependence among all members of its staff.

564. The notion of organization invokes the idea of hierarchy. In order to be effective over time, organizations must clearly and unambiguously assign responsibilities. Indeed, the very creation of an organizational chart - with the limits that it imposes on each set of functions and responsibilities - suggests both interdependence and exclusivity. The interplay of these two principles favours a certain amount of stability and guards against excessive autonomy. Nevertheless, the preceding chapters have addressed at length the reasons why a simple hierarchy is insufficient, why it must be complemented by a non-hierarchical entity (for example, an internal committee), and why the statistical agency must be willing to sacrifice strict adherence to the hierarchical structure to adapt to external changes.

565. The reality is that statistical agencies must adjust to a changing environment and must do so in a timely fashion. To accomplish this, agencies must closely monitor technical, environmental and legal changes, and they should engage in an ongoing discussion about how their structure should adapt to changes over which they have no control. Just as change is constant, so should the evolution of priorities be constant.

566. Descriptions of an organization necessarily look at each component individually and examine its attributes and functions, as well as the factors that suggest that it be organized in one way or another. However, the more detailed those descriptions, the less one understands their part in an interrelated system.

A. Principles of organization

567. In an effective statistical system where all activities are successfully integrated, there are bound to be groups championing different sets of priorities. For example, one

group may uphold the view that the key activity is to ensure that user needs are correctly interpreted and provided for. Another group may insist that no effective performance is possible unless the appropriate respondents are identified and sufficient care is taken to make sure they understand the questions and give the best possible replies. A third group may argue that however successful the activities championed by the others, they are futile unless estimates are accurate and correct rules of aggregation are observed. In a truly successful agency the tension generated by these three conflicting views gives rise to a system of checks and balances that ensures the production of the best possible data.

568. The above description represents a static view of an effective organization. In practice, a statistical agency should be simultaneously adaptable and stable. Technical change seldom proceeds in a continuous and predictable fashion. For this reason, effective statistical organizations must scan the technical horizon and keep abreast of technological advances. If forthcoming technical changes are likely to affect the way statistics are collected, compiled and used, there will barely be time to overhaul the system before those changes overtake it.

569. The functions of a statistical agency can be described under four comprehensive headings:

- Functions required to ascertain user requirements and ensure that they are met (this implies sustained communication with those who are, or who could be, interested in statistical information);

- Those required to ensure that statistical information meets quality standards (this implies the ability to gauge the minimum standard of reliability necessary to guarantee both the usefulness and credibility of statistical data);

- Those required to determine, in conjunction with respondents, the least intrusive and most convenient ways of gathering basic information (directly, as well as from other agencies when possible);

- Those that allow the statistical organization to review and learn from its own practices.

570. These functions should be supplemented with others that ensure adaptability and uniformity of the products of the statistical process. Statisticians can use these criteria in evaluating the soundness of their organizations.

571. The most efficient internal organization is not one that strictly categorizes its staff by their various backgrounds and approaches to statistical activities. While some grouping of staff by function and professional background is necessary, total separation is inappropriate. When certain activities are not respected or careers get blocked on the basis of previous experience, the tensions that arise can severely hinder a statistical agency's performance.

572. Review and evaluation are crucial activities that should be undertaken by a dedicated part of the organization. The purpose of these two activities is to learn from past mistakes; to help purge the organization of attributes that have become obsolete or undesirable; and to impress upon users that the agency has not succumbed to inertia.

573. In order to increase the credibility of the systematic evaluation of a statistical agency's activities while introducing new perspectives, it is best if outside resources are co-opted for both reviewing and evaluating. This can be done through consulting contracts or, where applicable, as part of the regular activities of the network of advisory committees.

574. No prescription is available for the number of hierarchical levels any one organization should have. This is determined by those who design the organization and depends on such considerations as the scale of operations, what is considered manageable and the specialization of the staff.

575. There is no suggestion of a hierarchical set-up in the diagrams in annex III. (For an examination of how internal committees fit into this hierarchy, see chapter V.) Neither is there any suggestion that all the facilities (substantive and service departments) mentioned must fall within a single agency. Although this is preferable from a number of points of view, in many situations the cost of bringing it about is not commensurate with the resulting benefits to the user community.

576. The present handbook does not mention initiatives that mobilize resources for a relatively short period of time and are dissolved once their objectives are attained. Therefore, comments relating to the organization of the census of population are limited to the material presented in chapter IX.

B. Internal functions

1. Office of the chief statistician

577. The office of the chief statistician should carry out two kinds of activity:

- Leadership and management of the statistical agency by giving direction to its financial administrator, director of personnel and those responsible for its substantive programmes;

- Management of external relations, the most important of which are those concerning the ministry responsible for the agency, the key government counterparts, the country's legislative authorities, the media and the chief statistician's peers abroad.

578. Whether the chief statistician conducts these activities directly or through advisers is dependent upon personal preference and the scale of operations. There are large offices where a number of responsibilities are delegated to the chief statistician's principal advisers, and he/she is only called on when the matter at hand concerns the integrity of the office or of its database, related policy issues or the ministry in charge of the office.

579. Sometimes functions normally associated with the head of a statistical agency are put in the hands of a principal adviser. The adviser then takes on all matters related to personnel management (other than appointments at the highest levels) and matters associated with the day-to-day financial management of the agency, thereby allowing the chief statistician to tend to other concerns, such as the office's external relations. The chief statistician, however, remains responsible.

580. The function of the legal adviser tends to be linked to the chief statistician, irrespective of the way in which the office is organized. Of course, whether the legal adviser is on staff or is consulted on a regular basis depends on preference and availability. All cases involving matters of integrity (e.g., exceptions to confidentiality provisions or granting access to data before they are published, in exceptional circumstances) and for which the law is ambiguous require the judgement of the chief statistician, supported by the most reliable legal advice. Figure A.3 in annex III represents a possible structure for the chief statistician's office.

2. Dissemination

581. Advances in computer technology and communications have affected the way statistical agencies disseminate data. The statistical agency should constantly gauge market preferences regarding content, the medium chosen for delivery and the level of explanatory detail to be included with the data. To do so, it must maintain relations with principal user constituencies. The needs of users must then be communicated to the producer departments so that they may assemble data in the form best suited to user needs. Marketing concerns must also be taken into account, including determining the price of publications, maximizing their usefulness and ensuring the widest possible dissemination. In addition, there is the function of maintaining special relations with the media, which is the principal instrument for disseminating statistical information to the general public.

582. There are many possible ways to divide the tasks of the department in charge of dissemination. Figure A.4 in annex III suggests one possible model.

3. The field organization

583. The field organization is best organized on a functional basis, and should serve all of the subject-matter departments in the statistical agency. A sensible alternative to this form of organization is difficult to imagine. However, it is not uncommon for the field organization to have an internal structure that manages household and business inquiries separately.

584. If the statistical agency relies heavily on administrative data, the field organization may look after those records as well, in the interest of efficiency. Obviously, in this case the principles behind functional organization and subject-matter organization come into partial conflict. A possible structure for a field organization is shown in annex III, figure A.5. This example includes collection activities based on administrative records, but shows them as a separate department within the field organization.

585. The field organization performs the following functions:

- Maintaining contact with respondents;
- Explaining credibly to respondents the purpose of a statistical inquiry, securing cooperation, and retaining respondents' goodwill throughout;
- Providing feedback to the rest of the statistical organization regarding: (a) the quality of the frame after it has been tested in the field; and (b) the receptivity of respondents to a particular statistical inquiry and the instruments used to conduct it;
- Taking charge of the initial editing of the information collected. There is no set boundary between the responsibility of the field organization and that of the subject-matter departments. Efficiency, training, and the individual perceptions of the subject-matter departments among other things, play into the way work is delegated. However, it should be kept in mind that the closer one is to the respondent, the easier it is to correct errors;
- Researching effective methods of data collection, including necessary adaptations of questionnaire and classification standards, techniques of persuasion, incentives and deterrents.

4. Subject-matter departments

586. Subject-matter departments perform a number of unique functions that are difficult to delegate precisely because they are specialized, concern a well-defined set of users, and often an equally well-defined set of respondents. In broad terms, the functions of subject-matter departments are as follows:

- To assess user needs and the most cost-effective way to meet them, as well as to forecast the direction in which those needs are evolving;
- To have an action plan on the best method for collecting relevant information, given the additional constraints imposed by limits on paperwork generated by government agencies;
- To balance the special requirements of users with the constraints imposed by the use of standard definitions, international norms of classifying and accounting and the specific needs expressed by those who compile the macroeconomic accounts;
- To document the quality attributes of the data produced and make the results accessible to both researchers and the general public.

587. In practice, relations with key users in Government should be considered a distinct function simply because of the disproportionate amount of contact they require. What follows is an overview of the structures necessary for the subject-matter department

to carry out its functions in a number of different statistical domains (see figure A.6 in annex III).

588. Basic statistics constitute the raw material a statistical agency works with. The subject matter-unit can be organized in a variety of ways. One is by source (business, household, institutions and public sector); this method of organization has the merit of coinciding with the structure suggested for the field organization. Another alternative is to organize the subject-matter area by user constituency. This possibility has the merit of coinciding with the structure of that part of the agency responsible for such activities as marketing and anticipating user needs. The subject-matter unit can also be structured by process. For example, it can be made up of one department that specializes in surveys of business accounting records, another that deals with brief monthly surveys administered to businesses and households alike, and so on.

589. The most stable and robust structure embodies all these considerations. Accordingly, it is typical to find structures in which a distinction is made between household and business statistics (source of information) as well as between microeconomic and macroeconomic statistics (user constituency). The proportions of the mixtures vary but it is unlikely that any structure can be based on a single criterion.

590. There are additional alternatives on how to divide each of the major substructures. For instance, one way of dividing basic economic statistics is by industry (with departments in charge of forestry, agriculture, mining, manufacturing, construction, transportation, distribution, communications, etc.). While such a division is appealing, it leaves some major issues unresolved. For instance, consumer prices, exports of goods and services, investment in machinery and equipment, industrial and commercial employment, and expenditure on research and development are all important to the explanation of changes in GDP, but they cut across all industries.

591. The difficulty in using a single criterion to create substructures exists for social statistics as well. For example, one might conceive of a division based on the source of information (institutions concerned with education, health and welfare). However, such a distinction would not work well by itself. Within the category of health there is interest simultaneously in the activity and effectiveness of the health provider (hospitals and clinics); in the outcomes of health activities (patients as part of households); and in the technologies used (results of research and development expenditures). Clearly, the most effective way of dividing labour in the area of social statistics is to take several criteria into consideration.

592. When organizing an office, the major effort is to emphasize relevance, adaptability and a demonstrable understanding of user needs, the most effective division of labour is one in which the departments are defined by user constituency (in this case the division can mirror the way the Government is structured). Such a classification is particularly important for industries such as those involved with energy, transportation or agriculture. However, in some cases there is hardly any room for choice. When the information source is unique and dominates all other activities relative to the subject (e.g., international trade in goods, for which the national customs administration is the

source of the vast majority of documentation), little opportunity exists for combining it with other matters. In other cases, the possibility does exist; for example, price indexes in general, and the CPI in particular, are based on a combination of method of compilation and source of information.

593. For certain statistics that cut across all sectors and all industries, there is some choice in how to best organize them. One example is statistical information on the demand for labour and fixed equipment. The statistic on the demand for labour comes from business and public sector surveys, but its supply is estimated through household inquiries. If the two are split according to the source of information, much of the significance of the broad division of statistics into social and economic areas would depend on the placement of the household surveys of the labour force.

594. It is difficult to take sides on this matter since the arguments are so complex; in the end, personalities and a sense of internal balance play deciding roles. It is possible to imagine an organization in which the heads of each unit depicted in figures A.5, A.6 and A.7 (see annex III) are at the same hierarchical level and are all under the supervision of the chief statistician, as well as one in which the units belong to different groups and only the head of each group reports to upper management.

595. Figure A.7 in annex III gives a more detailed view of a possible way to organize the department of basic economic statistics. The distinctions drawn are merely put forward as an example. The following considerations underlie the suggestions:

- With respect to activities represented under industry statistics, what is sought is information about their cost structure, their gross value of production and the elements that make up value added. The adjusted sum of the values added should be a subtotal (after a few conceptual adjustments) in the national accounts;

- Some industries are direct counterparts of a ministry, which may have its own statistical branch and/or generate information for statistical purposes as a by-product of its administrative or regulatory activities. A suggested grouping for those industries places them under the heading "Industry statistics: group 1". The others are part of group 2;

- The three activities grouped under the heading "Economy-wide basic economic statistics" are sui generis. They rely on a unique source of information (e.g., international trade) or a unique technique (e.g., price indexes) or on a wide variety of sources and special circumstances (e.g., installation of capital equipment).

596. Figures A.8 and A.9 in annex III indicate possible structures for social and household statistics and for the department dedicated to labour. The considerations that underlie the models are similar to those stated above. In other words, strategic reasons may exist to consolidate all labour statistics into one organizational unit, not because of homogeneity of methods or sources but rather to interact more effectively with the ministry of labour. Similar thoughts may dominate the decision to consolidate the

production of all statistics related to health and education so as to simplify contacts with powerful ministries that may have their own statistical branches.

597. There is no standard way to organize macroeconomic statistics. In many cases, they are estimated by the research departments of central banks or by specialized departments in national ministries of finance. However, they possess certain unique attributes that should influence how they are organized, as explained below:

- Macroeconomic statistics are not the result of direct measurement. Rather, they are jointly derived from basic economic statistics, public accounts and accounting identities;

- The chief concerns of the national accountant and of the balance of payments compiler include the balancing properties of the system, differences between the various accounts and estimation procedures for incomplete elements;

- Balancing supply and demand for each industry, required for the estimation of total supply (GDP), will necessarily result in unexplainable differences and gaps. Review of these differences constitutes essential feedback for the managers of basic economic statistics;

- The relative strengths and weaknesses of the basic data as revealed through the balancing exercise are critical elements in the formulation of any development programme for basic economic statistics.

598. Given the above characteristics, two propositions follow:

- Compiling the macroeconomic accounts is effectively a full-scale analysis of the quality of the basic economic statistics that comprise them. Accordingly, it is best managed by an independent department;

- The concerns of those compiling the national and international accounts are so analytical in nature that it may not be the best of use of their talents if they take part in conducting statistical surveys or negotiating with other government departments over the provision of administrative records.

599. The department in charge of macroeconomic statistics does have a number of straightforward duties. It is the architect of the national economic accounts in the broad sense of the term (with the scope defined in *System of National Accounts 1993*.[125] It should be equally responsible for certain derived estimates, such as the index of industrial production (usually the estimate of the value added at constant prices of the sectors responsible for mining, manufacturing and part of public utilities) and the level and rate of change in productivity, where such calculations exist.

[125] Commission of European Communities, and others (United Nations publication, Sales No. E.94.XVII.4).

600. Since there are many instances in which the statistical agency is not responsible for the compilation of the national accounts, the consequences of dividing the responsibility for macroeconomic statistics should be mentioned. The producer of basic statistics is often less concerned with estimates of GDP than with loss of quality in economic statistics. Accordingly, coordinators in systems where responsibilities are split should be especially mindful of the importance of ongoing critical evaluation from the perspective of those who compile the national accounts.

601. Whether or not the macroeconomic accounts department should also be responsible for such statistics as the flow of funds table or the national balance of payments depends on the capacity of the central statistical agency to access and interpret financial transactions. As this capacity varies a great deal, in many cases the responsibility for the balance of payments, or at least for the capital account of the balance, remains with the central bank.

602. In general, a statistical system has much to gain from close contact between producers of basic statistics and compilers of the macroeconomic accounts. Such contact should move in both directions. The system benefits if there is prompt submission of basic results and a critical review and assessment of the quality of those results once they have been incorporated into the national accounting tables.

603. Figure A.6 in annex III assumes that the responsibility for **all** the macroeconomic accounts lies in one department.

604. The last two decades have witnessed increased interest in a number of non-traditional statistics, the most significant of which are those related to the environment and natural resources, the diffusion of scientific knowledge, and the acquisition and use of new technologies. In addition, the dependence of many offices on tax and pension-related administrative records has increased substantially. Tax and social security-related statistics developed as a by-product of new statistics on consumer behaviour, which resulted from linked survey and administrative records. In the near future, as Internet use for business and consumer-related matters as well as for research, education and other areas becomes universal, it is likely that the realm of statistics will expand even further.

605. None of these statistics fits perfectly with the traditional split between economic and social subjects. Some fall into both categories. Others - particularly those related to science and the natural environment - represent a new field of inquiry. Whether or not they require their own departments (particularly in smaller offices) cannot yet be determined. In addition, these statistics are still in a phase of development; there are few internationally agreed-upon standards for collection and compilation, and in many instances the chief responsibility is still in the hands of other ministries, and not necessarily in the statistical branches within those ministries.

606. One possible solution is to house new statistical developments in the research department of the statistical agency, if such a department exists. Another is to create a research facility within the national accounting department. Clearly, the proper solution will vary from country to country.

5. Statistical infrastructure

607. The departments responsible for the statistical infrastructure have the following three main functions, which are reflected in the organization of the statistical agency:

- Developing scientific methods and their application in the measurement of variables characteristic of social and economic processes;

- Drafting codes that ensure both internal consistency in the way variables are defined and classified and a certain amount of intercountry comparability (compliance throughout the national statistical system is assumed);

- Creating and maintaining the databases required to sample businesses, households, and physical facilities.

608. In more ways than one, the department in charge of the development and application of scientific methods also acts as the professional conscience of the statistical system. As such, it should adhere to the strictest quality standards.

609. The department in charge of standards and classifications should possess sufficient authority to set legal standards against which there is limited appeal. In general, review of the correctness and soundness of a particular standard or method should take place prior to its implementation.

610. The department in charge of the statistical agency's sampling frames should maintain the records' physical and functional integrity and keep them up-to-date; provide frame extracts to those conducting sample surveys or censuses; and make sure all parts of the statistical agency use official sampling frames rather than unauthorized surrogates.

611. These responsibilities presuppose an agency-wide conviction that it is best to have a single comprehensive sampling frame for each major application (e.g., all business surveys) rather than separate frames for each survey, and that survey-taking departments should pool their knowledge, updating a collective frame rather than maintaining individual frames.

612. Commonly, mathematical statisticians are concentrated in the department in charge of sampling and sample survey design. In addition to its other responsibilities, the department should be able to substantiate the following principles:

- All surveys conducted by the statistical agency should be based on sound designs;

- The information necessary to gauge the reliability of the statistics produced by the agency must be intelligible and accessible to all users;

- All members of the statistical agency should be thoroughly convinced of the need to base their measurement activities on sound scientific principles as the only means to establish the quality of the statistics produced.

613. So long as these three principles are at the forefront of the statistical agency's agenda, less importance is placed on whether the department in charge of statistical methods should be physically distinct from all others, whether its staff should be dispersed among the user departments within the agency or whether to adopt alternative solutions. The design of the infrastructure will depend largely on country-specific circumstances.

614. In practice, one needs to strike a balance between the two concerns. On the one hand, mathematical statisticians can contribute most to a healthy statistical agency as part of multidisciplinary project teams, in which they defend quality, advise on scientific methods and work towards increased efficiency in the realization of projects. On the other hand, they must be part of an organization that supports the development of their technical skills and provides avenues for their career advancement. Achieving a balance can be challenging. Figure A.11 in annex III shows one possible way of organizing for this area.

6. Technical infrastructure

615. Developments in technology have greatly expanded the capabilities of a statistical agency in the following four areas:

(a) All staff members in many statistical offices now have access to powerful, relatively inexpensive computer equipment;

(b) User-friendly applications software has given staff members control over a number of key statistical functions ranging from questionnaire design to collection, editing, tabulating, mapping and publishing. Readily available off-the-shelf components have made in-house application programming easier, and component reuse within the organization has become more common;

(c) Computer networking has facilitated internal access to data and metadata through established tiered client/server environments;

(d) Information technology has made timely access to external sources of information feasible for staff members, thereby making it possible to conduct research, gather general information and perform other relevant tasks at all levels of an organization, rather than solely through top management.

As a result of these and related changes, new concerns have emerged regarding the management of the information technology environment.

616. In the light of these developments, the department in charge of the technical infrastructure should perform the following functions:

- Manage the information technology model of the organization as described in chapter VII, section A;
- Administer the technical infrastructure of the agency;

- Determine the extent to which outsourcing is to be used and manage the relationship with vendors;
- Plan the replacement of capital equipment;
- Provide advice concerning ways to use information technology to advance the mission of the statistical agency.

7. The analytical function

617. The analytical function must be truly pervasive, occurring in all areas of a statistical agency. However, an agency bears a heavy operational burden, so its staff cannot engage in pure analysis all the time. Certainly, an analytical approach to problems is a necessity and should be omnipresent, but in this context analysis has a different connotation.

618. There are two major types of analytical activities to consider. One, which can be categorized as research, seeks to improve the efficiency of operations; to refine the concepts underlying measurement activities; and to innovate with methods that minimize error. The other analytical activity seeks to make sense of the results obtained; to place them in meaningful social or economic contexts; to relate them to other events and processes; and generally to make them more valuable to users. Naturally, feedback on any inadequacy or ambiguity of numerical results is a by-product of this analytical activity.

619. The comments in this section primarily pertains to the second set of analytical activities. In terms of organization, the agency should decide whether this activity takes place in all subject-matter departments or whether it should be concentrated in one department or area that will serve the entire agency. However, an effective agency generally incorporates elements of both approaches.

620. A possible boundary could be conceived along the following lines: explanatory material accompanying the release of new results (particularly those of ongoing surveys or more complex statistical activities) should be handled by the subject-matter department; analytical material designed to stand on its own (e.g., a study of demand for health facilities in light of the latest demographic projections, or the relation between survival rates of small firms and their propensity to innovate through new production processes) should be handled by a dedicated department capable of economic, sociological and demographic analysis.

621. One possible location for the unit in charge of analysis is in a subject area such as macroeconomic statistics or social statistics, depending upon the analytical emphasis in the agency. Another alternative is to place this function in the office of the chief statistician.

8. Planning

622. Planning is essential to a successful statistical agency. A sound plan proposes a series of objectives and offers reasonable arguments on how they are to be met and why the resources allocated are indeed adequate.

623. The planning function deals with establishing a process that produces a plan, defines the conditions of its implementation, monitors its execution, and advises on fallbacks and alternatives when necessary.

624. There are two ways to organize the planning function. One technique is to appoint a planning officer or dedicate a planning office to conduct this exercise annually and to be responsible for maintaining the plan. The other is to engage the management of the statistical agency to cooperate in a collective effort and produce a balanced plan. Clearly, an effort involving all parts of an agency will receive more acceptance, support and commitment than a specialized effort.

625. The time frame is an especially important element in planning. Developmental statistical activities should not be limited to a single-year plan; nonetheless, planning should be realistic and not look too far into the future. The longer the time frame, the less reliable are the planning assumptions necessary to ensure a proper allocation of resources. A possible balance between the two considerations is to plan according to a three-year time frame.

9. Horizontal and vertical mechanisms

626. A detailed description of horizontal mechanisms is included in chapter V. There are a few differences between vertical hierarchies and committee structures. The vertical (or line) structure of a statistical agency broadly follows the hierarchy of public administration; it is in many instances ordained in the agency's legislation; and it often corresponds to the financial allocations made by the Government to the statistical agency. As such it cannot be easily altered, although total inflexibility should be avoided.

627. The horizontal structure of a statistical agency (i.e., its ad hoc committee structure) exists to solve management, subject-matter and procedural problems inherent in the official structure of the agency. Owing to the nature of the problems, their effectiveness in resolving conflicts and the respect they gain as a source of dispassionate advice, these committees provide a sense of cohesion that the vertical structure at times unwittingly undermines. Playing these two roles requires the committee structure of a statistical agency to be highly flexible so that it can take full advantage of the personal attributes of its staff in responding quickly to problems as they arise.

C. Building external support

628. No statistical agency can function effectively without the systematic help of outside contacts. The more prestigious these contacts, the more they will bolster the credibility of the office.

629. A statistical agency can be challenged by members of its various constituencies on several fronts. Users may demand explanations of how priorities are determined; assurances regarding the quality of results (i.e., use of objective methods and the absence of political tampering); and guarantees of the confidentiality of individual records.

630. These questions can be difficult to answer, particularly those regarding quality and priority ranking. The agency's position is immensely strengthened if it can demonstrate that a well-chosen, knowledgeable group of outsiders reviewed its decisions and either agreed or suggested modifications that were taken into account in the final determination. Likewise, the agency position on the objectivity and the timeliness of chosen methods can be strengthened if it can point to their review and approval by the best technical experts available.

631. For these reasons, while a senior council or commission is typically charged with a periodic review of statistical policies and priorities, a number of agencies have built a network of supplementary advisory bodies. Their reports are made available to the public and the government authorities responsible for the agency.

632. Supportive measures will allow the statistical agency to face all the challenges that arise out of the exercise of its mandate. Whatever mechanisms are put in place, the following are crucial:

- A proper legal basis;
- Distinguished and interested outsiders (national and international) who serve as members of a network of commissions and committees, both formally and informally;
- Public status commensurate with the responsibilities of being chief fact-finder for the Government and for the nation.

633. In the end, the agency should demonstrate that it has managed its resources wisely, kept the Government and the public informed, served the international statistical community and communicated important information impartially and effectively.

ANNEX I. Annotated model of a National Statistics Act

Introduction

Chapter II, Section E of the present edition of the *Handbook of Statistical Organization* covers some general principles of statistical legislation, but contains few specifics. Annex I presents specific texts that might be useful for countries that want to introduce a general statistics law or modify an existing one. It should be stressed that this "model statistics act" is not in any way meant to be prescriptive or normative. It is just an illustration of the issues that are addressed in actual statistical legislation in various countries; several of the texts are derived from actual statistical laws.

The model, prepared for the fictitious country of "Numberland", contains two types of elements:

1. Issues that are about matters of principle and that should be dealt with in all statistics acts (printed in **bold** typeface). In this regard, reference is also made to the Fundamental Principles of Official Statistics, adopted by the Statistical Commission of the United Nations in 1994. These issues often relate directly to what is said in the Principles, as will be explained in annotations to the text.

2. Alternative or optional elements. The heading "Alternatives" indicates solutions that are different, but not necessarily inferior to the ones described in the issues mentioned before. "Optional" elements are more country-specific; they may work for some countries, but may be unacceptable for others.

Statistics Act of Numberland

Note: The Act consists of three main sections: general (see chapter II, section E.1), which concerns the main actors of the statistical system and their roles, responsibilities and interactions; statistical operations and data collection, including some provisions for regionally decentralized systems (see chapter II, section E.6); and data confidentiality, including access to information protected by other laws (see chapter II, section E.4).

A. General

1. Definitions[a]

In this Act:

(a) *Chief statistician* means the Chief Statistician of Numberland;

(b) *Department* means any department, board, bureau, agency or other division of the government of Numberland or of the Government of a region or any agency of either;

(c) *Minister* means a member of the Cabinet of Ministers of Numberland;

(d) *Respondent* means a natural or legal person in respect of whom or in respect of whose activities any report or information is sought or provided pursuant to this Act;

(e) *Council* means the National Statistical Council of Numberland.

2. Appointment of the Chief Statistician

The President of Numberland, at the recommendation of the Council of Ministers, shall appoint an officer whose title will be "Chief Statistician of Numberland" to hold office for a renewable, fixed term of five years.

Note: Appointment of the Chief Statistician for a fixed term helps to guarantee his professional independence and to prevent political interference with official statistics (see also above, chapter II, section C.4).

Alternative One

The Prime Minister of Numberland shall appoint an officer called the "*Chief Statistician*".

Alternative Two

The Parliament of Numberland shall appoint an officer called the "*Chief Statistician*".

[a] See also chapter II, Sect. E.1 of the present *Handbook.*

Alternative Three

At the recommendation of the National Statistical Council, the President of Numberland shall appoint an officer called the "*Chief Statistician*".

Option

The President of Numberland shall appoint a Minister for Statistics, who shall act as the *Chief Statistician*.

3.Role of the Chief Statistician

The Chief Statistician shall:

(a) Advise on matters pertaining to statistical programmes of the departments of the Government of Numberland, and confer with those departments to that end;

(b) Decide on the manner in which data for statistical purposes are collected, how they are compiled and when and how statistics are published;

(c) Supervise generally the administration of this Act and control the operations and staff of Statistics Numberland;

(d) Represent Numberland in international statistical meetings or designate one or more staff members of Statistics Numberland to do so.

Note: The provisions in this article support the coordinating role of the Chief Statistician (subparagraph [a]); his professional autonomy (subparagraph [b]); see also annex II, "Fundamental Principles of Official Statistics" and his/her international role (see annex II, articles 9 and 10 of the Fundamental Principles of Official Statistics).

4. Statistics Numberland

There shall be a statistics bureau, to be known as Statistics Numberland, the duties of which are:

(a) To collect, compile, analyse and publish statistical information relating to the commercial, industrial, financial, social, economic, environmental and general activities and condition of the people;

(b) To collaborate with departments of Government in the collection, compilation and publication of statistical information, including statistics derived from the activities of those departments;

(c) To promote the avoidance of duplication in the information collected by departments of government;

(d) Generally, to promote and develop integrated social and economic statistics pertaining to the whole of Numberland and to each of the regions thereof, and to coordinate plans for the integration of those statistics.

5. Work plan, release calendar and annual report

(a) Three months before the beginning of each new fiscal year, the Chief Statistician shall submit to the Council of Ministers[b] a work plan for the next fiscal year, setting out all major statistical collections and planned publications, as well as estimates of expenditure and revenues related to this;

(b) At the beginning of each new fiscal year, the Chief Statistician shall publish a calendar of the most important releases of new statistics in that fiscal year;

(c) Within three months after the end of each fiscal year, the Chief Statistician shall present a report to the Council of Ministers[b] with regard to the activities of Statistics Numberland in the preceding fiscal year.

Note: This article is mainly about transparency and accountability, two important aspects of the Fundamental Principles. The publication of the advance release calendar (subparagraph [b] above) prevents political interference with statistical outcomes.

6. National Statistical Council

(a) There shall be a National Statistical Council whose role is:

(i) To advise the Chief Statistician on statistical work plans; its advice shall be added when the work plan is submitted to the Council of Ministers;

(ii) To comment on the annual report that the Chief Statistician submits to the Council of Ministers; its comments shall be added to this report;

(iii) To advise the Chief Statistician on any other statistical issues.

[b]Or, as in the case may be, to the President, the Parliament or the Minister designated to be politically responsible for statistics.

(b) The Council shall be chaired by the Chief Statistician;

(c) The Council shall meet at least four times a year;

(d) The Council may set up subcommittees and ad hoc advisory groups;

(e) The Council shall have at least 15 members, representing the most important user groups of official statistics, in particular government departments, the business community and academia;

(f) Members of the Council shall be appointed by the Minister,[c] at the recommendation of the Chief Statistician. They will serve for renewable terms of four years;

(g) The Council's rules of procedure shall be approved by the Minister.

Note: The principal role of a National Statistical Council is to interface with the users of statistics and thereby enhance the relevance of official statistics (see annex II, "Fundamental Principles of Official Statistics", article 1). As there are many different ways to set up such a council, some alternatives to the above are listed below.

Alternatives

(a) The Minister chairs the Council, the Chief Statistician is vice-chair;

(b) There is an independent chairman; the Chief Statistician is an ex officio member;

(c) The Council has fewer or more members;

(d) The Council approves the statistical work plan (as opposed to just advising on it);

(e) Recommendation for membership through co-optation (Council itself proposes candidates);

(f) Membership is specified by law (e.g., "a representative of the Ministry of Finance, a representative of the Central Bank, a representative of the Council of Economic Advisers," etc.);

(g) Longer or shorter terms of service.

[c] The Minister politically responsible for statistics.

B. Statistical Operations and Data Collection

Note: This part of the law is mainly about practical arrangements for data collection, including access to government data sources that may be relevant for statistical purposes. Statistics should be collected in the most efficient way, and respondents should not be unduly burdened (see also annex II, "Fundamental Principles of Official Statistics").

1. Statistical personnel

The Chief Statistician may employ such commissioners, enumerators, agents or other persons as are necessary to collect for Statistics Numberland such statistics and information as the Chief Statistician deems useful and in the public interest relating to such commercial, industrial, financial, social, economic and other activities as the Chief Statistician may determine; and the duties of the commissioners, enumerators, agents or other persons shall be those duties prescribed by the Chief Statistician.

Options

Public servants

The Minister may, for such periods as it may determine, use the services of any employee of the public service of Numberland in the exercise or performance of any duty, power or function of Statistics Numberland under this Act or any other Act, and any person whose services are so used shall, for the purposes of this Act, be deemed to be a person employed under this Act.

Note: This implies that the Minister who is politically responsible for official statistics has the power to recruit civil servants outside Statistics Numberland to perform statistical duties; among other things, this may be important for censuses.

Contracted services

Any persons retained under contract to perform special services for the Chief Statistician pursuant to this Act; and the employees and agents of those persons shall, for the purposes of this Act, be deemed to be persons employed under this Act while performing those services.

Cooperation with regional authorities

The Chief Statistician may enter into arrangements with the Government of a region providing for matters necessary or convenient for the purpose of carrying out or giving effect to this Act, and in particular for all or any of the following matters:

(a) The execution by regional officers of any power or duty conferred or imposed on any officer pursuant to this Act;

(b) The collection by any regional department or regional officer of statistical or other information required for the purpose of this Act;

(c) The supplying of statistical information to the Chief Statistician by any regional department or regional officer.

All regional officers executing any power or duty conferred or imposed on any officer pursuant to this Act, in pursuance of any arrangement entered into under this section, shall, for the purposes of the execution of that power or duty, be deemed to be employed under this Act.

The Chief Statistician may enter into an agreement with the Government of a region for the exchange with or transmission to a statistical agency of the region of:

(a) replies to any specific statistical inquiries;

(b) replies to any specific classes of information collected under this Act;

(c) any tabulations and analyses based on replies referred to in (a) or (b).

An agreement with a region for the purposes of this section shall apply only in respect of a statistical agency of the region:

(a) that has statutory authority to collect the information that is intended to be exchanged or transmitted, pursuant to the agreement from a respondent who is subject to statutory penalties for refusing or neglecting to furnish information to the agency or for falsifying information furnished by him to the agency;

(b) that is prohibited by law from disclosing any information of a kind that Statistics Numberland, its officers and employees would be prohibited from disclosing, if the information were furnished to Statistics Numberland;

(c) whose officers and employees are subject to statutory penalties for disclosing any information of the kind described in subparagraph (b).

When any such information is collected by Statistics Numberland from a respondent, Statistics Numberland shall, when collecting information, advise the respondent of the names of any statistical agencies in respect of which the Chief Statistician has such an agreement.

Note: There are many different modes of interaction and cooperation between the national statistical agency and regional bodies. In some countries the national statistical agency has regional offices that are fully under its control (often called the "vertical

system"), while in others the regional statistical offices are part of the regional Government (the "horizontal system"). Mixtures of these two systems also exist. Still other types of relationships between regional and central Governments occur in federally structured countries.

2. Sharing of information

The Chief Statistician may enter into an agreement with any department or municipal or other corporation for the sharing of information collected from a respondent.

Such an agreement shall provide:

(a) That the respondent shall be informed by notice that the information is being collected on behalf of Statistics Numberland and the department or corporation, as the case may be;

(b) That where the respondent gives notice in writing to the Chief Statistician that the respondent objects to the sharing of the information by Statistics Numberland, the information shall not be shared with the department or corporation unless the department or corporation is authorized by law to require the respondent to provide that information.

Note: See also article 6 of the "Fundamental Principles of Official Statistics" in annex II.

Option

Access to records

A person having the custody or charge of any documents or records that are maintained in any department or in any municipal office, corporation, business or organization, from which information sought in respect of the objects of this Act can be obtained or that would aid in the completion or correction of that information, shall grant access thereto for those purposes to a person authorized by the Chief Statistician to obtain that information or aid in the completion or correction of that information.

3. False or unlawful information

Every person who, without lawful excuse:

(a) Refuses or neglects to answer, or willfully answers falsely, any question requisite for obtaining any information sought in respect of the objects of this Act or pertinent thereto that has been asked of him by any person employed or deemed to be employed under this Act; or

(b) Refuses or neglects to furnish any information or to fill in to the best of his knowledge and belief any schedule or form that the person has been required to fill in, and to return the same when and as required of him pursuant to this Act, or knowingly gives false or misleading information or practices any other deception there under is, for every refusal or neglect, or false answer or deception, guilty of an offence and liable on summary conviction to a fine not exceeding ..... or to imprisonment for a term not exceeding .....or to both.

4. Refusal to grant access to records

Every person:

(a) Who, having the custody or charge of any documents or records that are maintained in any department or in any municipal office, corporation, business or organization, from which information sought in respect of the objects of this Act can be obtained or that would aid in the completion or correction of the information, refuses or neglects to grant access to the information to any person authorized for the purpose by the Chief Statistician; or

(b) Who otherwise in any way willfully obstructs or seeks to obstruct any person employed in the execution of any duty under this Act

is guilty of an offence and liable on summary conviction to a fine not exceeding .....or to imprisonment for a term not exceeding .....or to both.

Note: Although enforcement by law may not be the ideal way to obtain basic data for statistics (see chapter II, section E.3), most statistics acts contain some provisions to make data collection for statistics statutory.

Options

Coding system for goods

The chief statistician shall establish a coding system for goods imported into and exported from Numberland to enable the collection, compilation, analysis and publication of statistics in relation to those goods.

Forms for statistical data

Instead of, or in addition to, using agents or employees for the collection of statistics under this Act, the Chief Statistician may prescribe that a form be sent to a person from whom information authorized to be obtained under this Act is sought. A person to whom such a form is sent shall answer the inquiries thereon and return the form and answers to Statistics Numberland properly certified as accurate, not later than the time prescribed therefore and indicated on the form or not later than such extended time as may be allowed at the discretion of the Chief Statistician.

Returns under the Income Tax Act

For the purposes of this Act:

(i) the Chief Statistician, or any person authorized by the Chief Statistician to do so, may inspect and have access to any returns, certificates, statements, documents or other records obtained on behalf of the Minister of National Revenue for the purposes of the Income Tax Act;

(ii) the Minister of National Revenue shall cause the returns, certificates, statements, documents or other records to be made available to the Chief Statistician or person authorized by the Chief Statistician to inspect the records.

Return of exports and imports from Customs

For the purposes of this Act, the Minister of National Revenue shall cause to be sent to the Chief Statistician returns of imports and exports into and from Numberland and details of the means of transportation used therefore.

Additional options

Population census

(i) A census of population of Numberland shall be taken by Statistics Numberland in the month of .... in the year ....., and every tenth year thereafter;

(ii) The census of population shall be taken in such a manner as to ensure that counts of the population are provided for each district of Numberland, as constituted at the time of each census of population.

Agriculture Census

A census of agriculture of Numberland shall be taken by Statistics Numberland in the year ..... and in every tenth year thereafter.

Census questions

The President of Numberland shall, by order, prescribe the questions to be asked in any census taken by Statistics Numberland.

Note: In some countries regulations for censuses are part of the general statistics law; in others censuses are governed by separate legislation.

C. Data Confidentiality

Note: Clearly, confidentiality of individual data is one of the main concerns of the Fundamental Principles. In addition to a general provision in the Statistics Act (article 11 below), an oath of office for statistical personnel (article 12 below) is often part of statistical legislation as well.

1. Prohibition against divulging information

Except for the purpose of communicating information in accordance with any conditions of an agreement made under this Act, and except for the purposes of a prosecution under this Act but subject to this section:

(a) No person, other than a person employed or deemed to be employed and sworn in under this Act, shall be permitted to examine any identifiable individual return made for the purposes of this Act;

(b) No person, who has been sworn in under this Act shall disclose or knowingly cause to be disclosed, by any means, any information obtained under this Act in such a manner that it is possible from the disclosure to relate the particulars obtained from any individual return to any identifiable individual person, business or organization.

2. Oath of office

The Chief Statistician and every person employed or deemed to be employed pursuant to this Act shall, before entering on his duties, take and subscribe the following oath or solemn affirmation:

> **I, ..., do solemnly swear (or affirm) that I will faithfully and honestly fulfill my duties as an employee of Statistics Numberland in conformity with the requirements of the Statistics Act, and of all rules and instructions there under and that I will not without due authority in that behalf disclose or make known any matter or thing that comes to my knowledge by reason of my employment.**

Where a person retained under contract to perform special services for the Chief Statistician pursuant to this Act is a legal person, the chief executive officer thereof and such other officers, employees and agents thereof as are used to perform the special services shall, before entering on any of the duties required under the contract, take and subscribe to the following oath or solemn affirmation:

I, ..., do solemnly swear (or affirm) that I will faithfully and honestly fulfill my duties as an employee of (name legal person) in respect of my employment in carrying out .....[d] in conformity with the requirements of the Statistics Act, and of all rules and instructions there under and that I will not without due authority in that behalf disclose or make known any matter or thing that comes to my knowledge by reason of my employment as described herein.

Options

The Chief Statistician may, by order, authorize the following information to be disclosed:

(a) Information relating to a person or organization in respect of which disclosure is consented to in writing by the person or organization concerned;

(b) Information relating to a business in respect of which disclosure is consented to in writing by the owner for the time being of the business;

(c) Information available to the public under any statutory or other law;

(d) Information relating to any hospital, mental institution, library, educational institution, welfare institution, public utility [e] or other similar non-commercial institution except particulars arranged in such a manner that it is possible to relate the particulars to any individual patient, inmate or other person in the care of any such institution;

(e) Information in the form of an index or list of individual establishments, firms or businesses, showing any, some or all of the following in relation to them:

(i) Their names and addresses;

(ii) The telephone numbers at which they may be reached in relation to statistical matters;

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[d] Reference to the contract that rules the tasks to be executed.

[e] *Public utility* means any natural or legal person that owns, operates or manages an undertaking for the supply of petroleum products by pipeline; the transmission or distribution of gas, electricity, steel or water; the collection and disposal of garbage or sewage; the transmission, emission, reception or conveyance of information by any telecommunications system; or the provision of postal services.

(iii) The products they produce, manufacture, process, transport, store, purchase or sell, or the services they provide, in the course of their business; or

(iv) Whether they are within specific ranges of numbers of employees or persons engaged by them, or constituting their work force.

3. Information is privileged

Except for the purposes of a prosecution under this Act, any return made to Statistics Numberland pursuant to this Act and any copy of the return in the possession of the respondent is privileged and shall not be used as evidence in any proceedings whatever.

No person sworn under this Act shall by an order of any court, tribunal or other body be required in any proceedings whatever to give oral testimony or to produce any return, document or record with respect to any information obtained in the course of administering this Act.

4. Disclosing secret information

Every person who, after taking the oath under this Act:

(a) Willfully discloses or divulges directly or indirectly to any person not entitled under this Act to receive the same any information obtained by him in the course of his employment that might exert an influence on or affect the market value of any stocks, bonds or other security or any product or article; or

(b) Uses any information described above in sub-paragraph (a) for the purpose of speculating in any stocks, bonds or other security or any product or article;

is guilty of an offence and liable on summary conviction to a fine not exceeding ....., or to imprisonment for a term not exceeding ....., or to both.

Options

Personation of Statistics Numberland employee

Every person who:

(i) Impersonates an employee of Statistics Numberland for the purpose of obtaining information from any person; or

(ii) Represents himself as making an inquiry under the authority of this Act when the person is not an officer, employee or agent of Statistics Numberland,

is guilty of an offence and liable on summary conviction to a fine not exceeding ....., or to imprisonment for a term not exceeding six months, or to both.

Application of fines

All fines imposed pursuant to this Act belong to the Government of Numberland and shall be paid to the Receiver General.

ANNEX II. The Fundamental Principles of Official Statistics

At its special session held in New York from 11-14 April 1994, the Statistical Commission adopted the fundamental principles of official statistics, as set out in ECE decision C (47), but incorporating a revised preamble. An extract from the report [*] containing the preamble and principles, as adopted is given below.

FUNDAMENTAL PRINCIPLES OF OFFICIAL STATISTICS

The Statistical Commission,

Bearing in mind that official statistical information is an essential basis for development in the economic, demographic, social and environmental fields and for mutual knowledge and trade among the States and peoples of the world,

Bearing in mind that the essential trust of the public in official statistical information depends to a large extent on respect for the fundamental values and principles, which are the basis of any society, which seeks to understand itself and to respect the rights of its members,

Bearing in mind that the quality of official statistics, and thus the quality of the information available to the Government, the economy and the public depends largely on the cooperation of citizens, enterprises, and other respondents in providing appropriate and reliable data needed for necessary statistical compilations and on the cooperation between users and producers of statistics in order to meet users' needs,

Recalling the efforts of governmental and non-governmental organizations active in statistics to establish standards and concepts to allow comparisons among countries,

Recalling also the International Statistical Institute Declaration of Professional Ethics,

Having expressed the opinion that resolution C (47), adopted by the Economic Commission for Europe on 15 April 1992, is of universal significance,

Noting that, at its eighth session, held at Bangkok in November 1993, the Working Group of Statistical Experts, assigned by the Committee on Statistics of the Economic and Social Commission for Asia and the Pacific to examine the Fundamental

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[*] Official Records of the Economic and Social Council, 1994, Supplement No. 9 (E/1994/29), chap. V.

Principles, had agreed in principle to the ECE version and had emphasized that those principles were applicable to all nations,

Noting also that, at its eighth session, held at Addis Ababa in March 1994, the Joint Conference of African Planners, Statisticians and Demographers, considered that the Fundamental Principles of Official Statistics are of universal significance,

Adopts the present principles of official statistics:

1. Official statistics provide an indispensable element in the information system of a democratic society, serving the Government, the economy and the public with data about the economic, demographic, social and environmental situation. To this end, official statistics that meet the test of practical utility are to be compiled and made available on an impartial basis by official statistical agencies to honor citizens' entitlement to public information.

2. To retain trust in official statistics, the statistical agencies need to decide according to strictly professional considerations, including scientific principles and professional ethics, on the methods and procedures for the collection, processing, storage and presentation of statistical data.

3. To facilitate a correct interpretation of the data, the statistical agencies are to present information according to scientific standards on the sources, methods and procedures of the statistics.

4. The statistical agencies are entitled to comment on erroneous interpretation and misuse of statistics.

5. Data for statistical purposes may be drawn from all types of sources, be they statistical surveys or administrative records. Statistical agencies are to choose the source with regard to quality, timeliness, costs and the burden on respondents.

6. Individual data collected by statistical agencies for statistical compilation, whether they refer to natural or legal persons, are to be strictly confidential and used exclusively for statistical purposes.

7. The laws, regulations and measures under which the statistical systems operate are to be made public.

8. Coordination among statistical agencies within countries is essential to achieve consistency and efficiency in the statistical system.

9. The use by statistical agencies in each country of international concepts, classifications and methods promotes the consistency and efficiency of statistical systems at all official levels.

10. Bilateral and multilateral cooperation in statistics contributes to the improvement of systems of official statistics in all countries.

ANNEX III. Figures representing possible ways to organize the functions of a statistical office

Annex III presents a selection of twelve figures that illustrate the most important functions carried out by the average centralized statistical office. These figures are not organizational charts. The arrows represent information flows rather than hierarchical relations. The latter are thought to be too dependent on the circumstances of individual offices to be shown in a handbook such as this one.

A distinction is made among the various flows of information that connect one group of activities to another. In some cases the flow is of directives, policies, metadata and advice. Such flows are generally shown using narrow-tipped arrows on broad shafts. Broad-tipped arrows normally illustrate flows of data, raw or processed. Feedback flows are shown by very narrow black arrows. The text appended to the bottom of each figure should make clear what flows and from whom to whom. Although there are other flows, they are not represented in the figures in order to simplify the material.

The figures bring out three key themes of the present *Handbook*. First, all viable organizations are articulated information processing systems. Secondly, all viable organizations have feedback loops. Thirdly, all statistical organizations should have an analytical and research function. Nothing is said here about relative sizes or who is in control of what. Individual managers will determine how to implement the models illustrated in the figures so as to fit their circumstances.

Figure A.1. Outline of the functions of a statistical agency

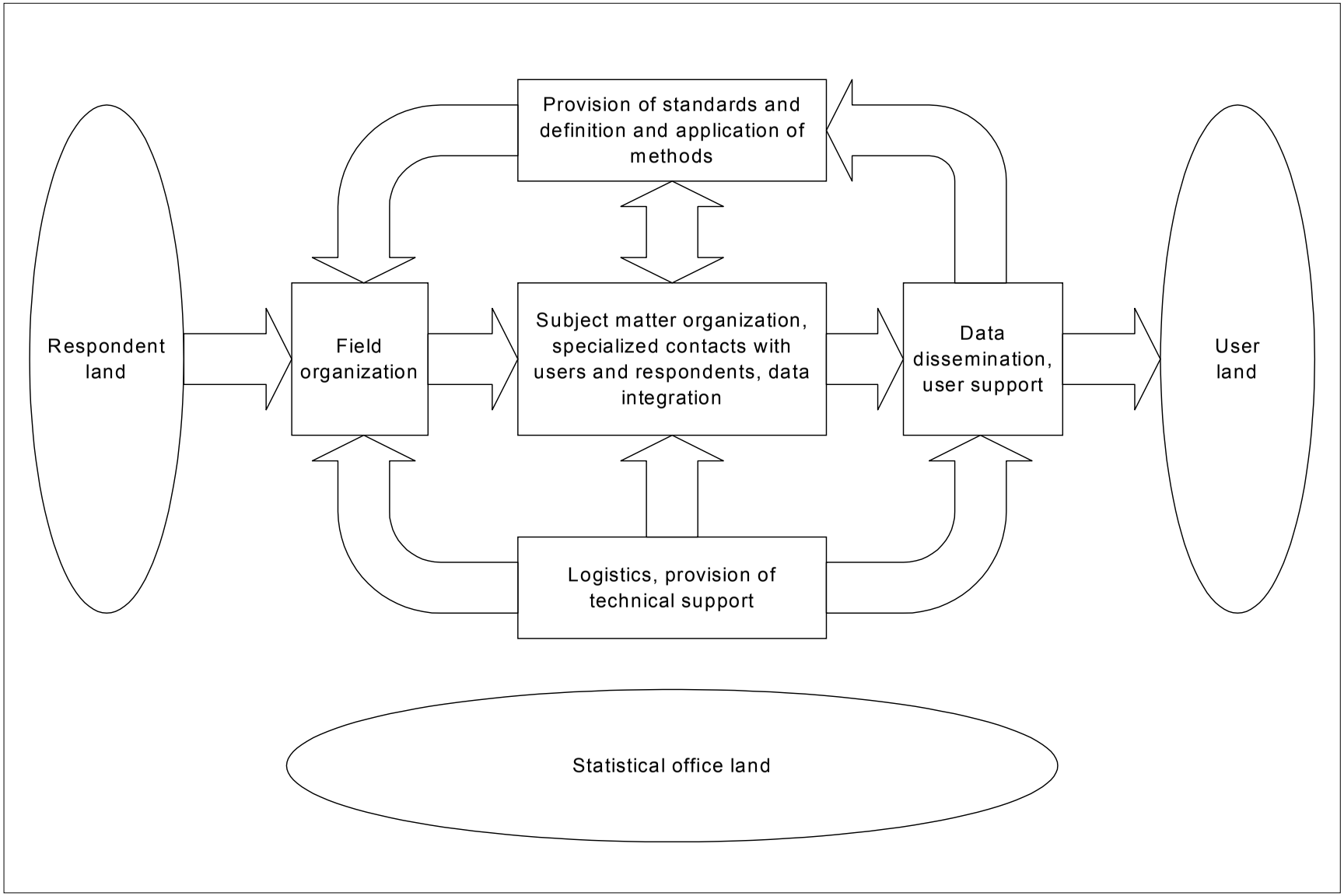
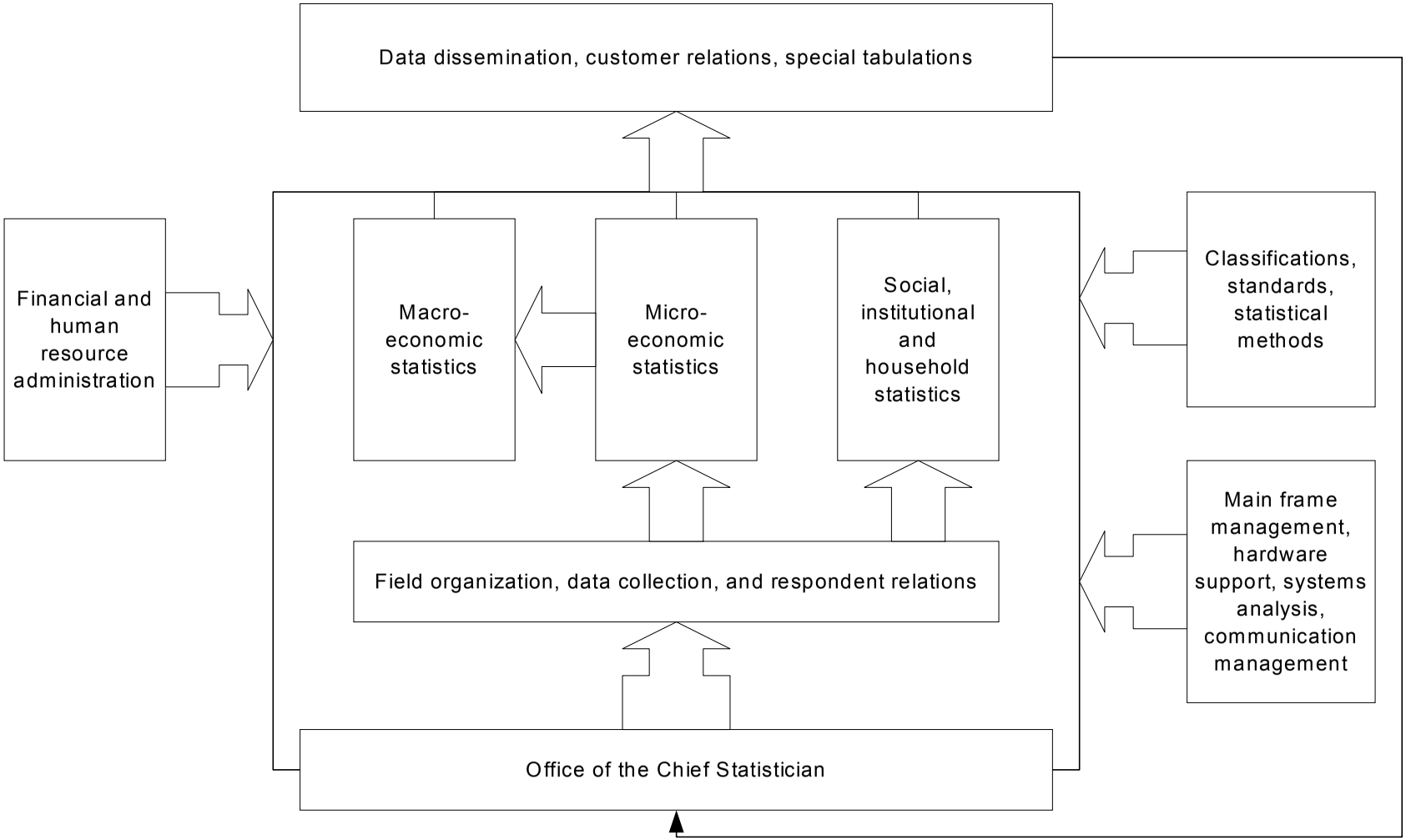
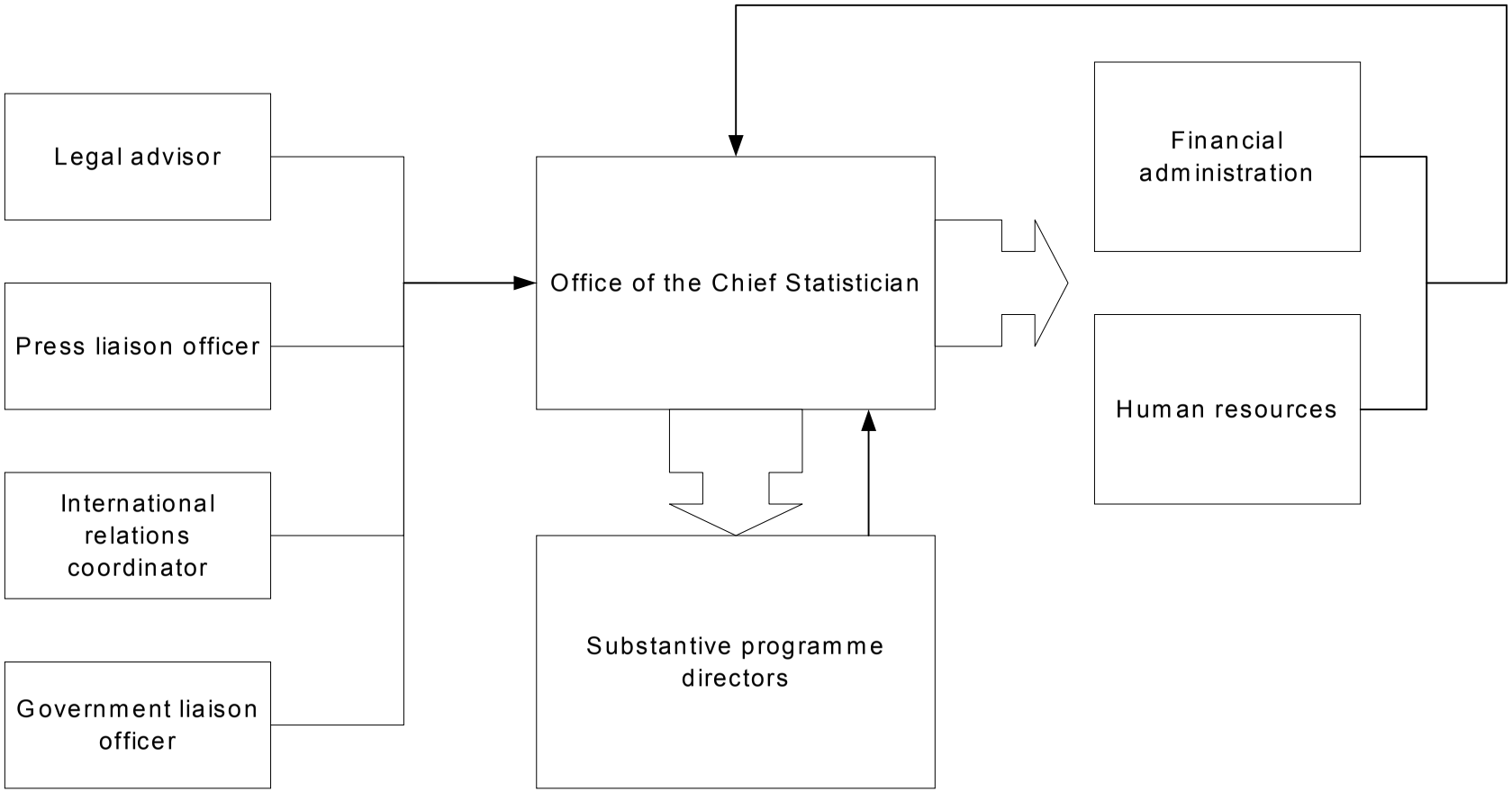


Figure A.2. Schematic structure of a statistical office: internal functions



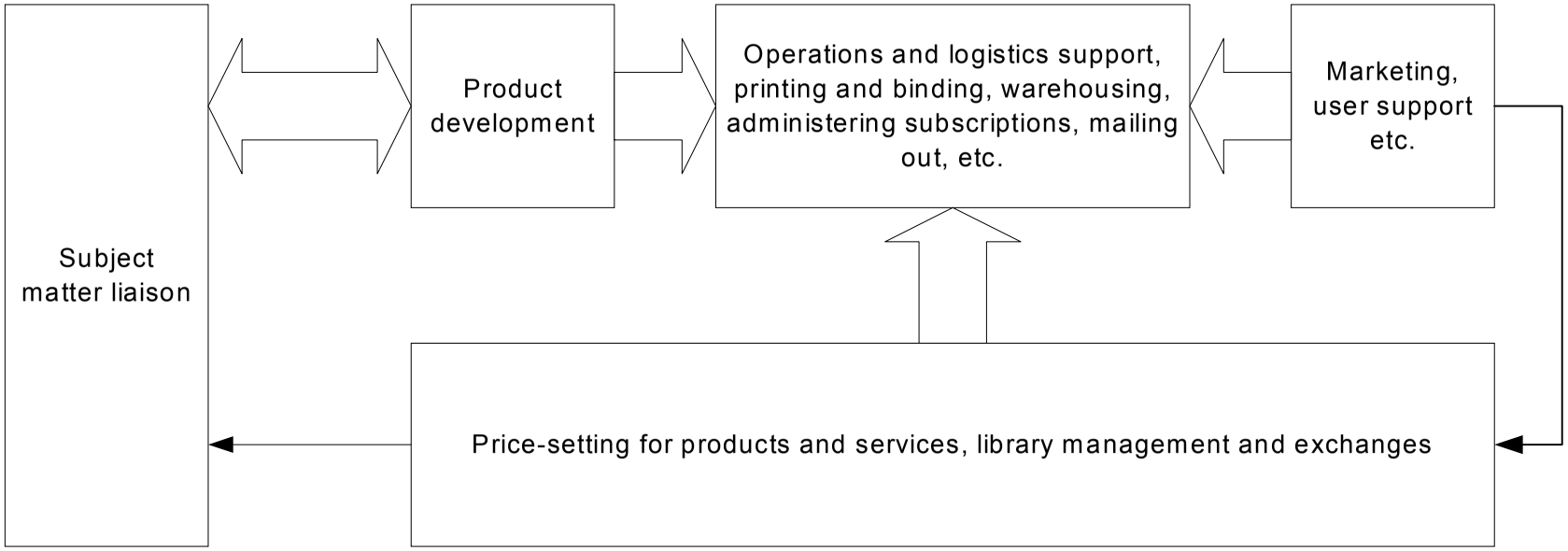
In this stylized diagram, the office of the Chief Statistician and the offices concerned with administration of financial and human resources provide policy directives and legal frameworks to the subject-matter areas. This is denoted by the arrows with a broad base. Within the subject-matter areas, the field organization provides raw data to the major subject departments, which in turn pass aggregated information to the area concerned with macro-economic estimates. All areas provide aggregated information to dissemination, represented by wide arrows. Dissemination and the subject areas are the main suppliers of feedback to the office of the Chief Statistician.

Figure A.3. Functions of the office of the Chief Statistician



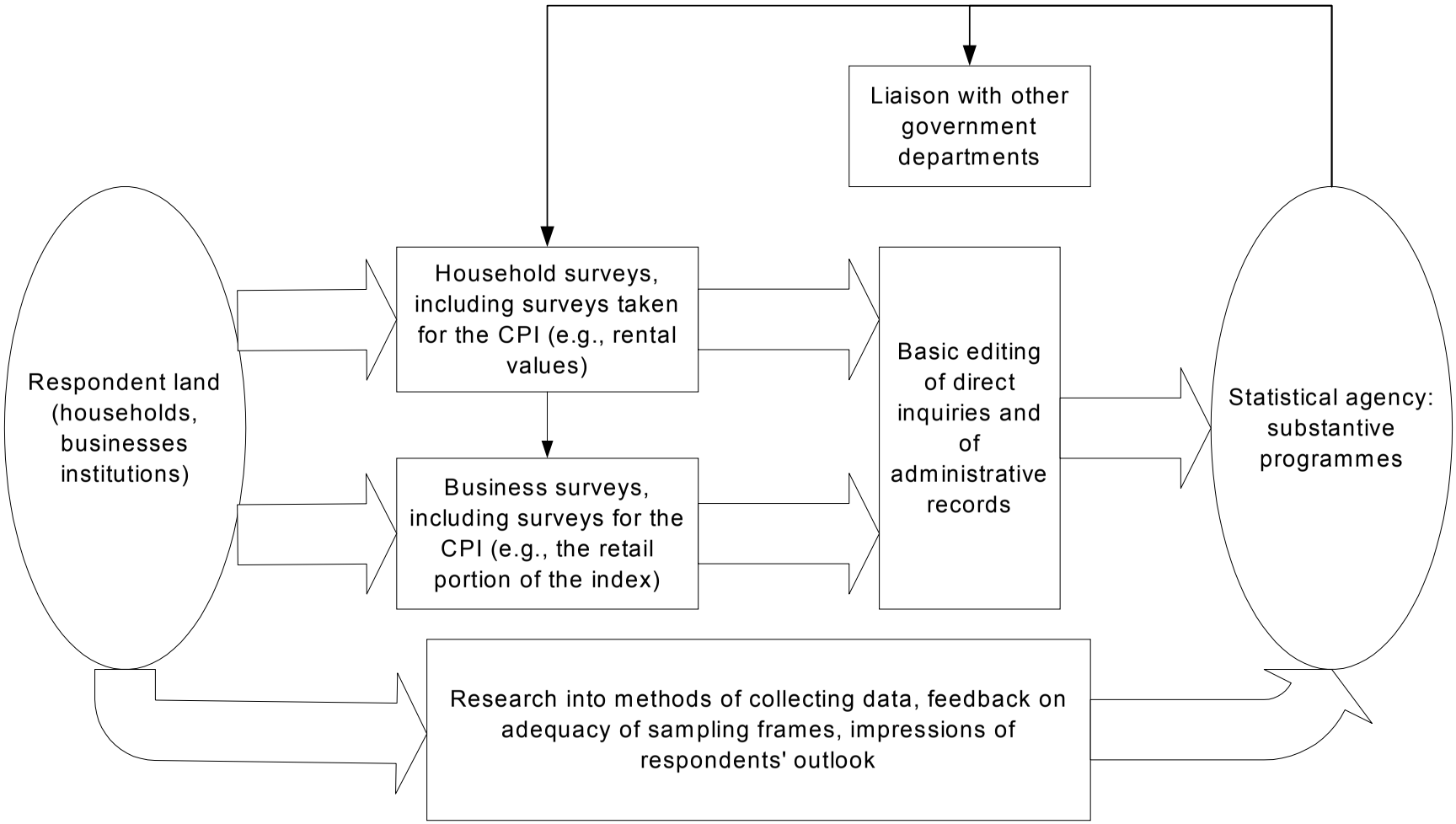
The office of the Chief Statistician receives advice and feedback (thin arrow) from all organizations in the office and is in close and direct contact with the legal advisor, the press liaison officer, the international relations coordinator and the Government liaison officer. The office issues policies and directives to all parties and the Chief Statistician administers the office through his/her advisors on financial and human resources management.

Figure A.4. Functions of a department charged with dissemination and user contacts



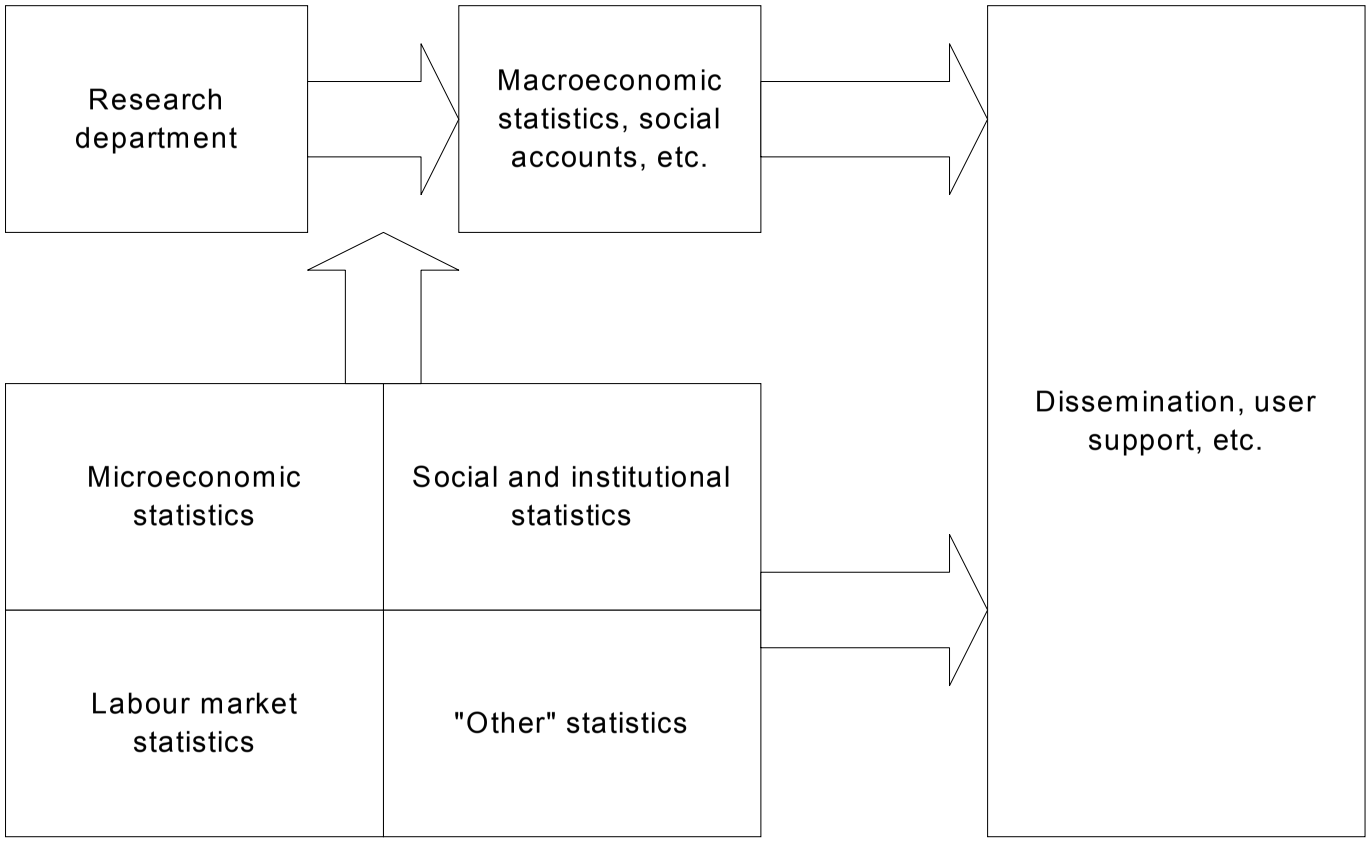
There is an iterative relationship between product development and subject matter, partly described by a double-headed arrow. Price-setting gets feedback (thin black arrow) from the distribution of publications. For the rest it is a matter of directives: operations and logistics are told by their clients what to do and how they should do it.

Figure A.5. Functions of a field organization, including the ability to collect administrative records



Respondents provide the field organization with raw data, which are edited before being handed over to programme areas. Research is conducted into methods and the prevailing mood of respondents and communicated to programme areas for changes in survey frameworks and details.

Figure A.6. Functions and subjects in the programme area of a statistical office



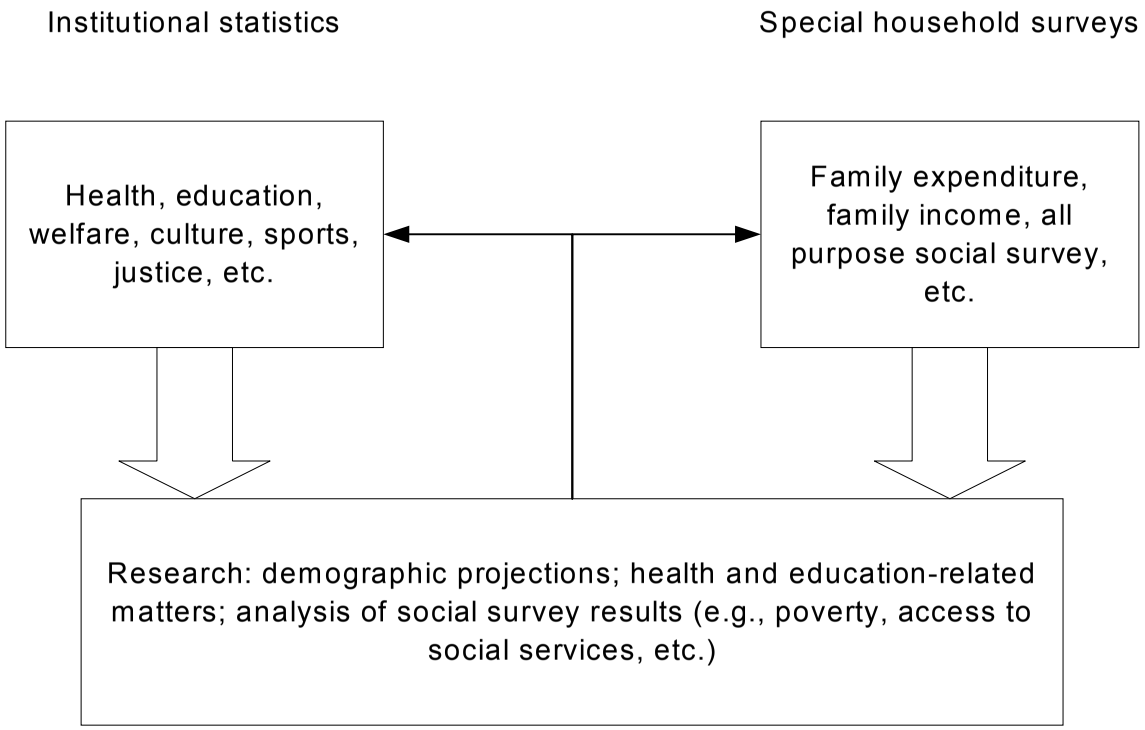
Side-by-side with the department in charge of macroeconomic (and social) accounts is a research arm that helps in assessing basic statistics. The latter are divided into four major groups largely as a function of the source of the raw data. Feedback is derived from contacts with users and, as far as the departments in charge of basic statistics are concerned, from the macroeconomic accounts.

Figure A.7. Possible breakdown by subject of programme area concerned with economic statistics

Industry statistics: group 1	**Industry statistics: group 2**
Agriculture	Commerce
Mining	Insurance and finance
Manufacturing	Personal services
Transportation	Construction
Information technology	

Economy-wide basic economic statistics
International trade in goods (exports and imports)
Consumer and producer prices
Expenditure on machinery and equipment

Figure A.8. List of subjects in a department concerned with household and institutional statistics



In the absence of an integrating framework comparable to the national accounts, this area requires a research capability that accesses the basic statistics collected by the two departments and provides them with feedback derived from its analyses.

Figure A.9. Possible analytical structure for the department concerned with the labour market

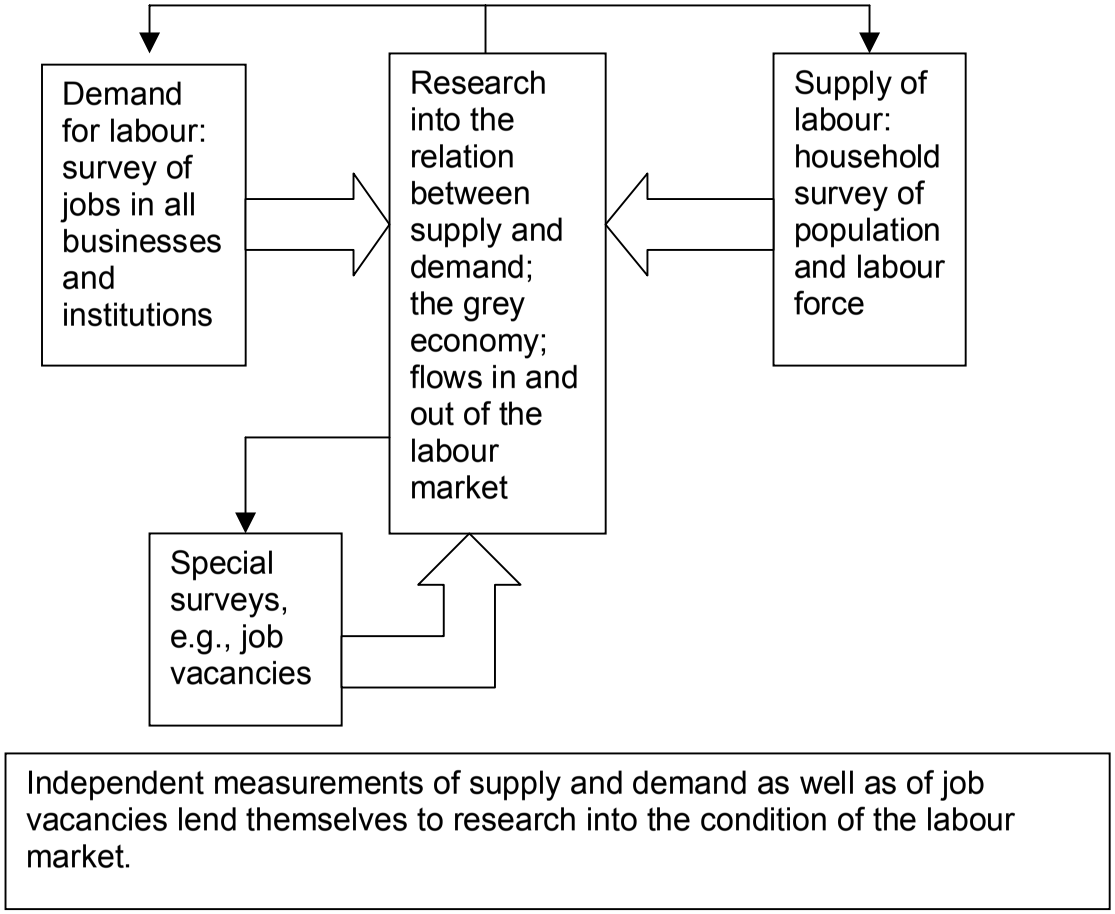
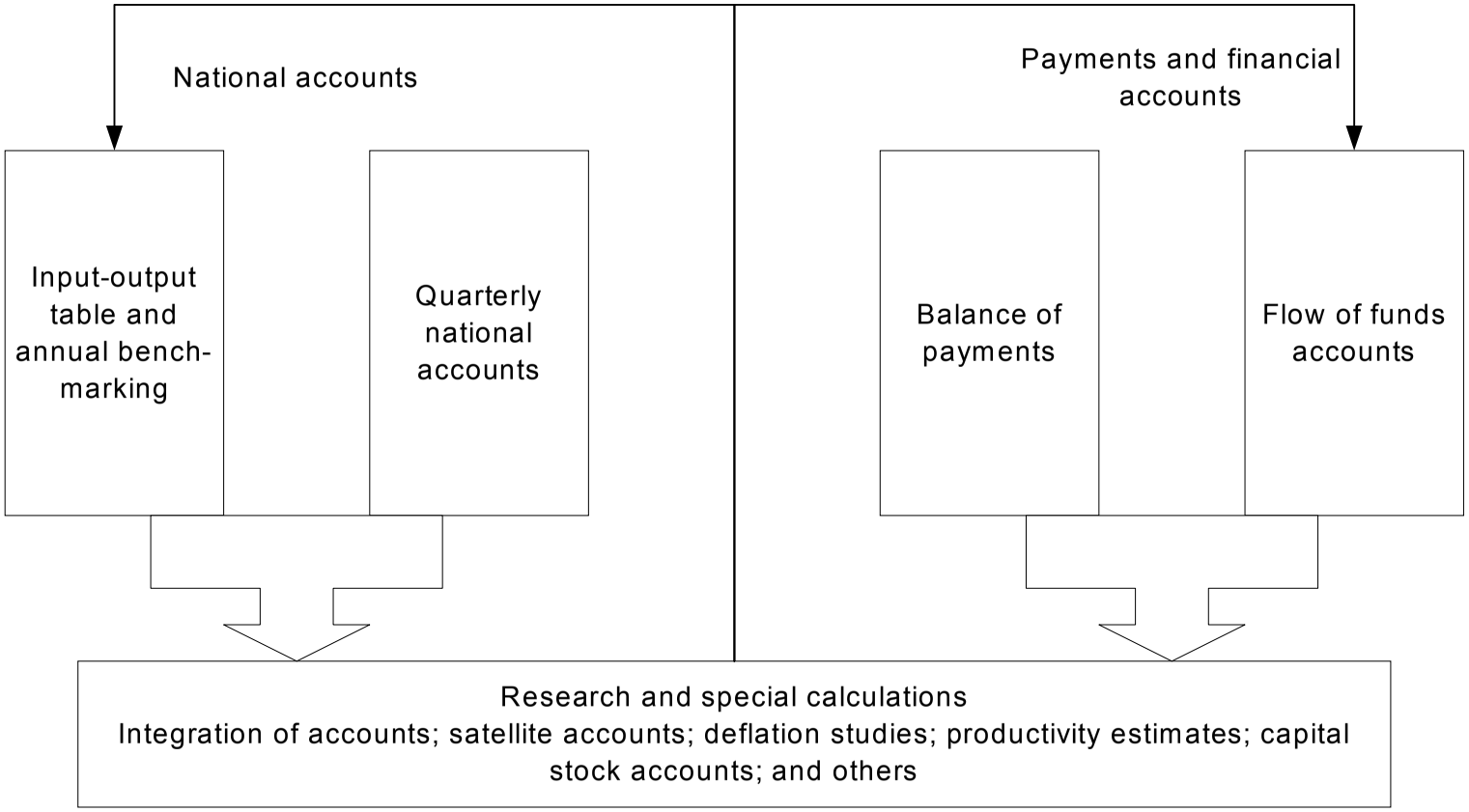


Figure A.10. Possible structure for a department in charge of macroeconomics statistics



The research department is primarily in charge of integration and is ideally placed to provide the four participating areas with the results of its efforts to integrate financial and "real" data.

Figure A.11. Possible structure of the department responsible for the statistical infrastructure

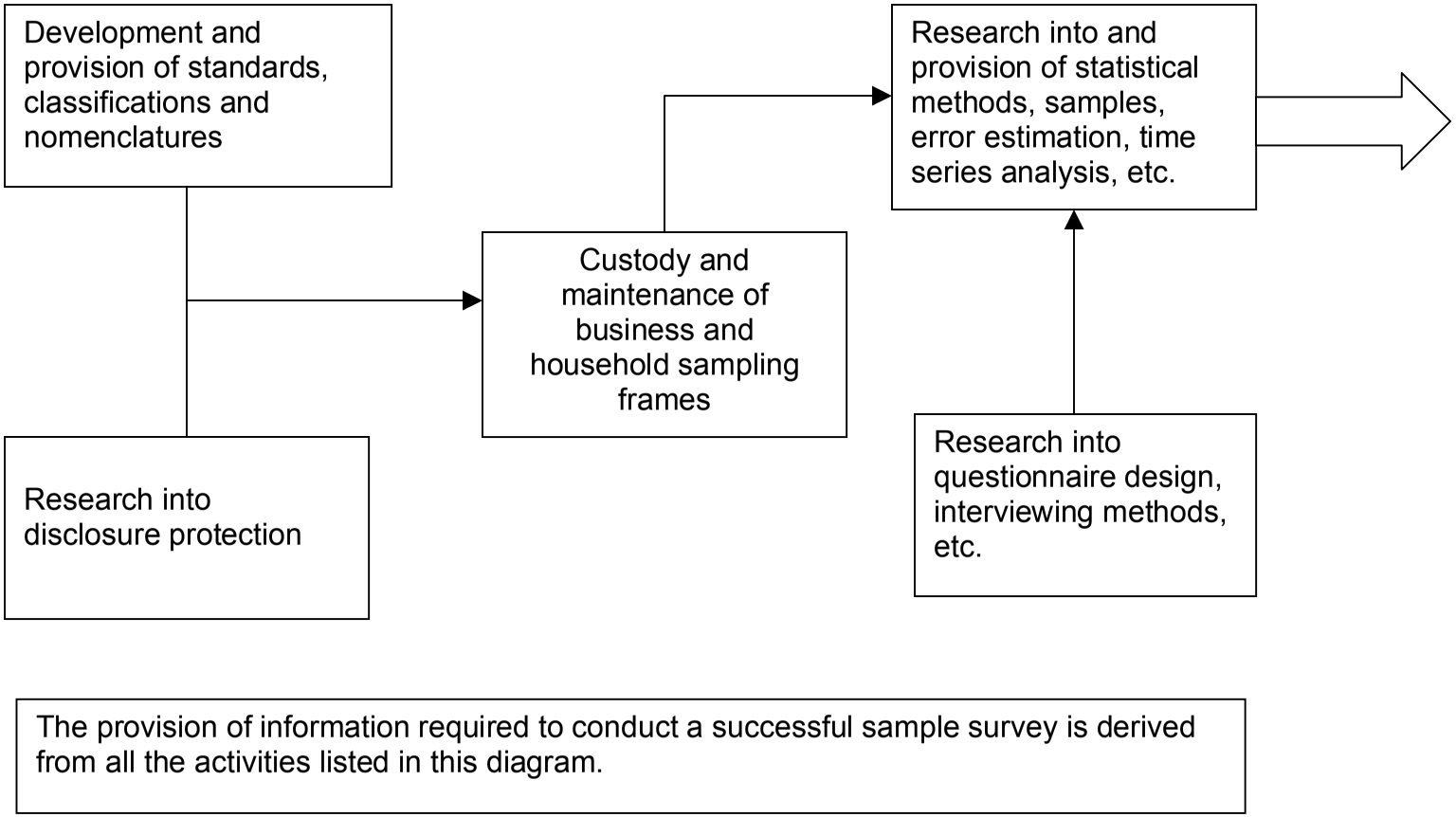
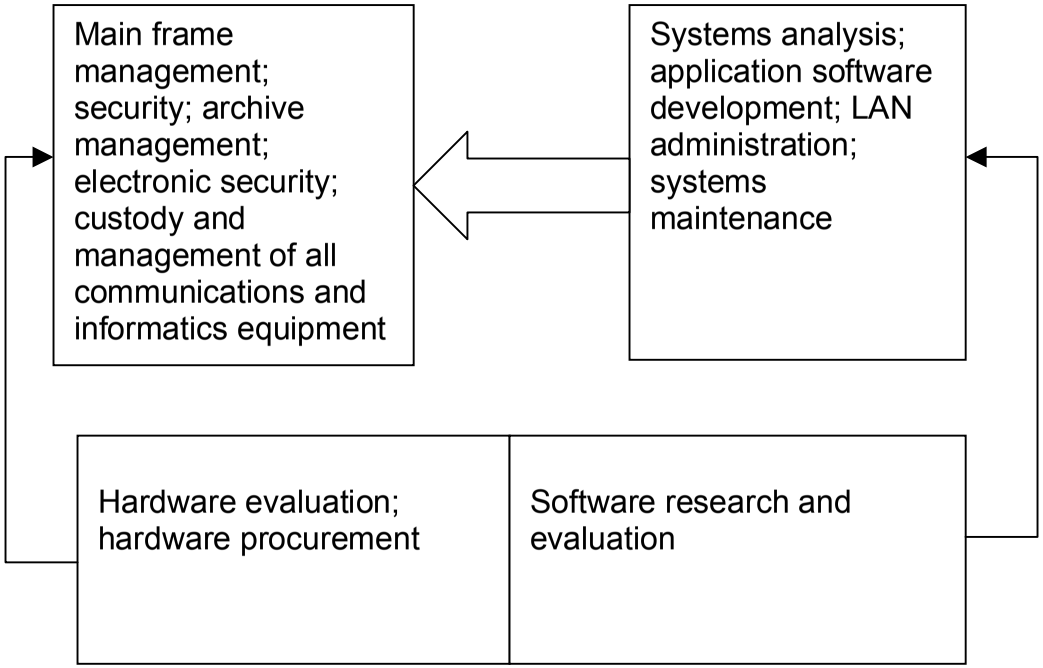


Figure A.12. Possible functions for a department concerned with the technical infrastructure of a statistical agency



Software development feeds hardware management and evaluation of hardware, and software tracks technological innovation and governs procurement.