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STATISTICS**



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NOTE

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INTRODUCTION

1. At its twenty-second session, the Statistical Commission discussed the recommendations for industrial statistics. For consideration of this topic, the Commission had before it the document entitled "Draft revision of International Recommendations for Industrial Statistics" (Provisional ST/ESA/STAT/SER.M/48/Rev.1). An earlier version of the document, prepared by the Statistical Office of the United Nations, was circulated to the regional commissions, the United Nations Industrial Development Organization (UNIDO) and other interested international organizations, as well as to national statistical offices and individual experts.

2. An Expert Group Meeting to Review the Preliminary Draft of the Proposed Revision to the International Recommendations for Industrial Statistics, held from 5 to 9 October 1981 reviewed the preliminary draft and the comments received from interested parties. Thus, the document before the Commission incorporated the proposals of the Expert Group and the comments and suggestions received that were endorsed by the Group.

3. The Commission agreed that the recommendations were a good framework for improving industrial statistics and satisfying the needs of the users of industrial statistics at both the national and international level. The Commission:

" (a) Approved the revision of the International Recommendations for Industrial Statistics, 4/ subject to the comments and suggestions made during the discussion of the Commission;

" (b) Requested the Secretary-General to issue and distribute the revised publication". 1/

"4/ International Recommendations for Industrial Statistics, Statistical Papers, Series M, No. 48 (United Nations publication, Sales No. E.68.XVII.10)."

4. The purpose of developing international recommendations for industrial statistics is to establish a uniform pattern for the measurement of industrial activity. If these measures are generally implemented by all countries, either completely or partially, depending on national circumstances, programmes will exist to satisfy national needs and should also contain a substantial degree of international comparability. Such recommendations are particularly useful as a guide for countries in the process of developing an industrial statistics programme.

5. The present publication updates the 1968 recommendations 2/ in respect of developments in this area over the past decade, both in the approach of countries to the industrial statistics concept and in the progress made in carrying out industrial inquiries. In the interest of harmonization, an attempt has been made to co-ordinate the standards of other organizations recognized in this field, particularly the International Labour Organisation (ILO), 3/ the Statistical Office of the European Communities (EUROSTAT) 3/ and the Council for Mutual Economic Assistance (CMEA).

6. Following the pattern established in the existing recommendations, 4/ the proposed system is centred on the annual industrial inquiry. The more-frequent-than-annual inquiry is often a limited version of the annual inquiry and, as such, is embraced as well. An infrequent inquiry is, for those countries that do not maintain an up-to-date register, of industrial undertakings, a prerequisite for

establishing such a register and hence for the system of annual inquiries outlined here. Industry, as previously defined, covers mining, manufacturing and electricity, gas and water - that is, major divisions 2, 3 and 4 of ISIC. 5/ Construction activity, for which separate recommendations exist, is not included. The system is confined to regular inquiries; occasional or irregular inquiries into specialized subjects are not dealt with. It is primarily concerned with statistics appropriate to the establishment or establishment-type unit. Enterprise statistics are discussed only to the extent that they make possible a closer approximation to total value added by the industrial sector in order to meet national accounting needs. International recommendations for enterprise statistics have not yet been formulated, and it is not the intention here to establish guidelines in this area.

7. The present recommendations are intended to supplement the earlier ones, which have been adopted by many countries, by providing additional guidance, particularly for those countries now moving towards the adoption of an integrated system of inquiries. They attempt to develop more fully the relationship between a system of industrial statistics and the revised System of National Accounts (SNA) 6/ adopted by the United Nations in 1968, as the experience of some countries in adapting their industrial statistics programmes to meet national accounting needs has provided useful insight into this matter. Also, the introduction by other international organizations of more advanced standards for the development of industrial statistics necessitates a reconciliation of the concepts used at the industrial-sector level with those appropriate at the total-economy level.

8. The present publication reiterates the basic recommendations that have already been established for industrial statistics, with the objective of measuring "census value added" (net in the sense that information collected in the census makes it possible to deduct from industry's gross output purchases from other sectors of the economy - raw materials purchased from the agricultural sector and expenditure on bought-in services - to the extent that the purchases are specified in census questionnaires). It also includes guidelines for measuring total value added, approximating the contribution of industry to the gross domestic product and net relative to the economy as a whole. The measurement of census value added should remain the primary, and minimum, goal of all countries. The measurement of total value added should be the ultimate goal of all countries but, as most have not yet reached a sufficiently advanced stage in the integration of their data collection, this measure will seldom be appropriate at the industrial statistics level, except through estimation. However, because of the varying degrees by which countries are working towards this objective, it is necessary to discuss a complete programme and establish standards in order to define an internationally comparable cut-off point for measuring the intermediate concept of census value added. In this context, a distinction is made between the industrial statistics programme and the extension of the programme to cover the industrial sector of the economy as a whole.

9. The role of women in national economies is receiving world-wide recognition. For this reason, greater emphasis must be given to the collection of relevant data. The recommendations have been extended accordingly.

10. The publication does not attempt to cover operational details involved in conducting industrial inquiries. The organization and conduct of infrequent inquiries is fully discussed in another publication 7/ and the methodology contained therein is readily adaptable to the conduct of either annual or more-frequent-than-annual inquiries.

Organization of the recommendations

11. Most countries have by now had some experience in building up an industrial statistics system, and it is clearly desirable to describe a set of objectives that should remain the goal of all countries regardless of the extent to which each one individually is able to achieve it. However, priorities have been designated within the general scheme. Items of information that all countries, except the few that are setting up a system of industrial statistics for the first time, should aim to provide are given priority 1. As countries develop their systems further, items given priority 2 should receive consideration. Other items that provide information useful for national accounts are given priority 3, while some items which will present particular difficulty for the establishments that complete questionnaires are not given any priority in the present recommendations. Countries developing a system of industrial statistics for the first time should endeavour to provide annually the information set out in the minimum programme included in the 1983 World Programme of Industrial Statistics - the number of establishments classified to each branch of industry, the employment situation, earnings and gross output.

I. GENERAL CHARACTER OF THE RECOMMENDATIONS

A. Purpose

12. In the 1968 recommendations, a distinction was made between the data to be collected and published by countries with developed industrial statistics and those to be published by countries beginning to develop or in the process of developing their industrial statistics. In contrast, the present recommendations present a set of objectives which have as a goal the establishment of standards for industrial statistics that can be adopted by all countries. The recommendations cover a comprehensive list of items to which priorities have been assigned for the guidance of countries in developing their industrial statistics.

13. The main aim is to provide guidance to developed and developing countries alike about the priorities that should be given to different items of information as resources permit countries to develop their statistical systems. Another important aim is to standardize the organization of data for the reporting of internationally comparable information. Countries with developed statistical systems will have little difficulty in complying with many of the recommendations, but countries beginning an industrial statistics programme are usually well advised to have fairly modest aims.

14. In addition to the recommendations considered basic to the programme for the industrial sector, the system also includes other items, with their definitions, which are applicable in extending the programme to cover industry in the whole of the economy. Some of these items are not normally ascertainable at the establishment level, but for the purpose of establishing the boundaries of an industrial statistics programme, it is necessary to consider them in the present recommendations. However, no formal priority is given to collecting such data because the possibility of collecting them will vary among countries.

15. The inquiry towards which these recommendations are primarily directed, and for which a general scheme is set out, is the annual inquiry. However, as the more-frequent-than-annual inquiry is a limited version of the annual, and some infrequent inquiries an extension, these types of inquiries are covered as well in terms of concepts and definitions. Other aspects peculiar to these inquiries are discussed below.

B. Limits of the recommendations

16. All items of data that were previously recommended only for collection in infrequent inquiries (that is, quantity and cost of individually important fuels, energy equivalent of fuels and capacity of power equipment) are included in the general scheme, although it is recognized that their priorities in individual countries will vary. Any additional items that may become relevant will be covered by future recommendations - for example, a 1993 World Programme of Industrial Statistics.

17. One of the primary purposes of the collection of monthly and quarterly information is for the calculation of indicators in the form of index numbers and for deriving quarterly estimates of national production, income and expenditure. The selection of indicators for this purpose varies from country to country and within a series may vary from industry to industry. Therefore, no specific

recommendations are included here. A detailed discussion of series for index numbers of price and quantity statistics is included in two publications 8/ which should be useful as a guide to selecting indicators in countries setting up such a system.

18. Some countries may wish to collect information on selected items on a more-frequent-than-annual basis in order to measure industry trends. However, because of the wide divergence of uses for which these types of indicators are required and the problems of implementing data collection, no international standards have been adopted for monthly or quarterly collection. One item of significance on a short-term basis only, "orders", is, for practical purposes, included in the general outline.

19. Ad hoc inquiries - that is, those taken occasionally or at irregular intervals - are not dealt with here. Nor are regular or occasional inquiries into specialized aspects of the industrial sector, such as the total stock of fixed assets or wage rates.

20. The industrial sector is defined to cover mining, manufacturing and electricity, gas and water (ISIC major divisions 2, 3 and 4). Construction, which was once considered a part of the industrial sector, is now the subject of separate recommendations. 9/

21. The establishment is the basic statistical unit dealt with - that is, the data considered in the industrial statistics programme are those appropriate for gathering when the establishment is used as the statistical unit. Enterprise-type data of a financial nature are dealt with only in the extension of the system.

22. The recommendations do not cover the commodity detail of intermediate consumption (except fuels and electricity), stocks or production since this has been dealt with separately. 10/

C. Priorities of inquiries of varying frequency

23. The various inquiries should be viewed in the following light. The annual inquiry is regarded as the central inquiry of the system; however, an infrequent inquiry with complete coverage will provide detailed information to be used as bench-mark data for other inquiries and for those countries that do not maintain up-to-date registers of their industrial establishments. Other infrequent inquiries can be regarded as an extended version of the annual inquiry, and the more-frequent-than-annual inquiries as limited versions of the annual. This approach should be useful for all countries regardless of the stage of statistical development. For those countries in the process of developing their industrial statistics, the approach indicates that priority should be given to developing the annual inquiry, although the framework for that inquiry will usually be based on the results of an infrequent inquiry.

24. Much emphasis is placed on the need for integrating the inquiries of various frequencies so that the data produced by each inquiry may supplement those produced by the others. In order that the results may clearly supplement each other, the inquiries need to be based on consistent concepts and definitions. To achieve this, special attention must be paid to scope and coverage, the statistical unit used, the classifications used, the reference period and the items of data to be gathered and their definitions.

D. Scope and coverage of the various inquiries

25. The industrial sector, for the purposes of these recommendations, comprises all establishments located within the territorial boundaries of the reporting country that are engaged primarily in mining, manufacturing and the production and distribution of electricity, gas and water (ISIC major divisions 2, 3 and 4). Industrial activities in international waters, such as the operation of petroleum and natural gas wells, should be included if these activities are subject to the laws, regulations and control of the country concerned.

26. Government departments, establishments and similar units should be included if they are mainly engaged in producing goods and services classifiable to industry as defined in paragraph 25 above, even though some of the units may not be run for profit or may not dispose of their output in the market. Such units may produce goods and services that, because of government policy, are sold at prices set below or above costs of production. Where commodities are produced by government departments engaged in social and community activities incidental to their services (for example, products made at vocational schools), it is often impossible to isolate the activities and they will be omitted from the annual inquiry.

27. Government units may furnish goods and services to the Government itself of a kind often provided by privately owned establishments. Examples are munition factories, navy dockyards, printing and publishing services. For these units, it is sometimes difficult to isolate the production activity since the units are not established independently of the departments they serve, and efforts should be made to encompass the activities in an industry only if they constitute a major part of the department or if they account for a substantial part of the total national output of an industry.

28. The coverage of the establishments in the various activities will in practice vary according to the frequency with which the data are required, the difficulty of obtaining them, the existence of alternative sources and the resources available to the statistical authorities. The coverage recommended may be attained by a complete inquiry of the relevant establishments or by using sampling techniques. The method of enumeration chosen will depend on the circumstances in each country. Since circumstances differ, it is not possible to make international recommendations on this question.

29. No recommendation has been made for a cut-off point to distinguish between the large and small establishments discussed below. The situation is different in each country and it is not possible to settle on a suitable distinction that is internationally useful. In addition, circumstances differ between industries, and the appropriate distinction between the large and small establishments may need to be adjusted to the characteristics of the establishments in each industry.

1. The annual inquiry

30. All countries, regardless of the stage of development of their statistics, have a limit to the resources available for conducting inquiries. None the less, countries should endeavour to provide estimates that cover all recognizable industrial establishments. This recommendation does not imply that a comprehensive inquiry is always necessary; the inquiry may, for example, cover all establishments above a given size (employment) and a sample of others; or all units might receive

an inquiry form, but an abbreviated version might be used for the small establishments; or estimates for the small establishments might be made from administrative data or from other statistical inquiries (labour force surveys, for example).

31. The emphasis in the annual inquiry is on obtaining reliable estimates, for in the most part, for fairly broad categories of the industrial activity of the country, with reliable figures for those narrower categories of industry of special significance in terms of economic growth. In addition, estimates of the industrial activities of important regions of the country may be necessary.

2. The infrequent inquiry

32. Some infrequent inquiries seek information about the stock of capital assets, for example, which most countries do not ask for on an annual basis. Sometimes such inquiries are limited to a selection of establishments. A second type of infrequent inquiry is necessary in countries that do not maintain up-to-date registers of industrial undertakings. Every 5 or 10 years, it will be necessary to take a complete census of industrial establishments to provide an adequate register for subsequent annual inquiries. 11/ Even if a country maintains an up-to-date register it may, at infrequent intervals, take a complete census of all industrial establishments to provide reliable bench-marks for short-term inquiries, to check the validity of its register or to collect information about the links between establishments on the register and the enterprises to which they belong.

33. "All establishments" means, in principle, all those establishments that were engaged, at any time during the inquiry period (that is, the period to which the data relate), in the production of goods or services for sale or exchange. However, the very small units not in operation at the end of the inquiry period or at the time of enumeration would normally be excluded.

34. If the coverage is to conform to SNA requirements, the infrequent inquiry, covering all industrial establishments, should include small-scale manufacturing activities in certain household units and, in addition, such activities in units that exist outside a household but have no established industrial premises, such as small sawmills in rural areas. The problems of identifying and including such units are discussed in the recommendations for the 1983 World Programme of Industrial Statistics. Information on these units will normally be obtained through other channels (household or population surveys, ad hoc inquiries and the like), and it is necessary to distinguish clearly the units to be considered as falling within the industrial sector - that is, where the primary activity is industrial - from units primarily engaged in other economic activities, generally ISIC major division 1 (agriculture, hunting, forestry and fishing), although the latter units may account for a considerable amount of industrial output as a subsidiary function.

35. In countries where household units contribute significantly to industrial output, efforts should be made to measure the activity at least infrequently. Units falling within the industrial sector (see para. 34 above) should be included in the scope of the industrial inquiry, but some countries may wish to record the results of household activity separately. The industrial output of units primarily engaged in other economic activities may be of great interest in production studies and the inquiry results might include separate information on such output. This should not, however, be attributed to the industrial sector.

36. Household units falling within the industrial sector are generally those covered by the following definitions: all units whose principal activity is the transformation of substances into new products from purchased (or discarded or waste) materials, whether the work is performed by power-driven machines or by hand, whether done in a factory-type unit or in the workers' home and whether the products are sold or are produced for own-account sustenance if the same unit also produces for the market. For certain vertically integrated industries, such as milk production combined with manufactured dairy products or tree-felling combined with saw-milling, the transformation from own raw materials should be included where the end products account for the preponderant part of the output. All small-scale mining and quarrying operations should be included.

37. For countries in the process of developing their industrial statistics, an infrequent comprehensive inquiry should be undertaken at least every 10 years. However, the extension of coverage from those establishments covered annually to the remaining, usually small, establishments should be undertaken with caution, particularly in the case of branches of industry with numerous small establishments and those not of strategic importance in economic growth. Given limited resources, caution in extending the coverage is necessary because of the many practical difficulties in enumerating small establishments and in order to ensure that the infrequent comprehensive inquiry does not disrupt the annual inquiries, especially during census operations.

3. The more-frequent-than-annual inquiry

38. The coverage of the more-frequent-than-annual inquiry is necessarily more restricted than that of the annual inquiry. Even in countries with a highly developed statistical system, it would be difficult to cover small establishments monthly or quarterly. However, if small establishments are significant in a particularly important industry, they may have to be included in the coverage. This will depend on the resources available.

39. A pressing practical problem in these inquiries is to restrict in some way the number of statistical units to be enumerated. The techniques by which this restriction is effected will necessarily differ depending on the characteristics of the particular branch of industry being dealt with. For example, where a major share of output is produced by a few establishments, as in the steel or cement industries, all establishments can be covered and enumerated. At the other extreme, in baking or brick production, for example, a larger number of small establishments may produce a major part of the total output of the branch and sampling techniques should be used. Only by using sampling is it possible to cover many establishments by enumerating a few. However, there are industries that fall between the two extremes, where the establishments are either too numerous to enumerate completely or too few for the satisfactory use of sampling. In these cases it is possible to enumerate, and thereby cover, all establishments above a given size. The size cut-off in each industry should be set low enough to ensure that a sufficiently large proportion of total production is covered.

E. Reference period

40. In both the annual and the infrequent inquiries, the data compiled should, in general, relate to a 12-month period. Because of this, there should be few, if

any, problems, as far as the reference period is concerned, in integrating data from these inquiries. This 12-month period should preferably be the (Gregorian) calendar year. However, where data are more readily available for particular establishments on a different fiscal-year basis, it may be necessary to accept data on that basis. In such instances, it would be desirable to collect some items of data, such as wages and salaries, on both a fiscal-year and calendar-year basis to facilitate building up calendar-year aggregates. If a fiscal year different from the calendar year is the normal accounting period for most establishments, the data may be compiled uniformly on a fiscal-year rather than a calendar-year basis. There are advantages if all establishments can submit returns covering an identical 12-month period, particularly in integrating the annual data with monthly or quarterly data. In many countries, the closing dates of the financial years of companies are spread widely over the year, and statistical offices find it difficult to obtain returns from establishments for a consistent 12-month period. If reporting periods differ in this way, a supplementary table in the published report showing the distribution of end-year dates by months will help users of the figures to estimate the period over which they are centred.

41. For the more-frequent-than-annual inquiries, the reference period should normally be the calendar month or the calendar quarter (three months: January-March, April-June and so on). However, some establishments work in quarterly periods of four, four and five weeks, and in such cases it will be necessary for the statistical office to standardize the information provided in the monthly returns by some estimation procedure.

42. It should be noted that a number of difficulties may arise if monthly or quarterly data are to be aggregated to provide annual figures, thereby avoiding the need to collect the same data annually. Even if the scope, coverage, statistical unit and data definitions are the same in the more frequent inquiries as in the annual, the reference period may still cause problems. If the units in the annual inquiry report are for a varying 12-month period (that is, some for the calendar year and others for a fiscal year), then to integrate the short-period data and the annual data may require a unit-by-unit aggregation of the monthly or quarterly data. As mentioned in paragraph 40, one solution is to collect annual returns for all establishments for an identical 12-month period. However, differences in scope, coverage and statistical unit may make it difficult to integrate the results of the two types of inquiry in this way, and problems arising from these sources will be compounded by the normally provisional nature of the data reported in the more-frequent-than-annual inquiries.

F. Statistical unit

43. The International Standard Industrial Classification and the 1983 World Programme of Industrial Statistics contain discussions of the different types of units found in statistical inquiries. In the present context, the "statistical unit" is defined as the entity for which the required items of data are compiled. For the inquiries dealt with in the present recommendations, the statistical unit should ideally be the establishment. In the case of the more-frequent-than-annual inquiries, however, there may be some reservations about this recommendation. As suggested in paragraph 52 below, the kind-of-activity unit is often acceptable for more frequent inquiries; the enterprise might also be considered under similar conditions.

44. The reporting unit (that is, the unit completing the questionnaire) may or may not be the establishment. When the enterprise and the establishment are identical, the situation is clear. In the case of multi-establishment enterprises, however, the enterprise may make a separate return for each establishment, or each establishment may make a return for itself.

45. The establishment is recommended as the statistical unit because it is the most detailed unit for which the range of data required is normally available. The data gathered, in order to be analytically useful, need to be grouped according to such characteristics as kind of activity, geographical area and size, and this is facilitated by the use of the establishment unit.

46. An establishment can be defined, ideally, as an economic unit that engages, under a single ownership or control - that is, under a single legal entity - in one, or predominantly one, kind of economic activity at a single physical location - for example, a mine, factory or workshop. This ideal concept of the establishment is applicable in many of the situations encountered in industrial inquiries, particularly in manufacturing.

47. In practice, however, the ideal concept of the establishment cannot always be employed. The establishment may be part of an enterprise that engages in more than one kind of activity at a single location and the organization and record-keeping practices of the enterprise may be such that separate data in respect of the outputs and coupled inputs of the different classes of activity cannot be readily compiled. In this instance, it may be necessary to use the local unit - that is, all the economic activities carried on at a single location under a single ownership or control - as the statistical unit. However, if each of the various kinds of activity of a local unit is substantial and is carried on in distinct establishments, or if most legal entities are in a position to report on the activities separately, efforts should be made to divide the local unit into units comparable to the establishments, which can be delineated in most instances.

48. Thus, the organization and record-keeping practices of producing units and the consequent limitations on the availability of data must be taken into account in defining the establishment for practical purposes. The establishment is, therefore, defined in operational terms as the combination of activities and resources directed by a single owning or controlling entity towards the production of the most homogeneous group of goods and services, usually at one location, but sometimes over a wider area, for which separate records are available that can provide data concerning the production of these goods and services and the materials, labour and physical resources (both direct and indirect) used in this production. This definition of the establishment should make it possible to use the same unit for all statistics on the production of goods and services and the intermediate inputs, labour and physical capital resources used for this purpose. Where the establishment is used, it is important that it be defined identically in each inquiry so that the statistics will be comparable.

49. Tying the subdivision of the multi-establishment enterprise into establishments to the availability of records results, in most cases, in establishments that are in practice the same as local units. In other words, the records maintained usually do not permit the gathering of the required data for a more homogeneous group of productive activities than those carried out by the enterprise at its separate locations. This results in establishments that often embrace a range of related activities. (In some cases, also, records may be so organized that the

establishments that it is practical to delineate cover activities and resources located at two or more sites that are close to one another.) However, in the case of very large local units that engage in several kinds of activity, as stated above in paragraph 47, efforts should be made to divide them into separate establishments so as to limit the range of activities covered under each unit to that usually included in distinct establishments.

50. In the case of manufacturing, the general discussion in paragraph 49 indicates the practical problems faced and the most appropriate solutions. In the case of mining, the definition of location should be such that the establishment includes the enterprise's collection of wells, shafts or pits that tap a single field. Any ore-dressing or ore-beneficiating plants located at the mine site should be included as part of the establishment. In the case of producers of electricity, gas and water, the establishment should be defined to embrace the producing plant and its associated distribution system, including, for the electricity industry, the transformer stations. However, for geographical information some limits may have to be set in terms of the areas used for statistical purposes.

51. Because of the nature of the electricity, gas and water industries, it may be advantageous to omit this ISIC major division from the general inquiry and to collect the required information from the responsible authorities. In order to avoid any overlapping or omission when following this practice, the status of electric power plants producing primarily for internal use should be determined. Where these are covered by the authorities, they should be considered as units engaged in secondary activities which have already been classified in terms of their own activity. Otherwise, they should be treated as ancillary units and their activities treated as suggested in paragraphs 53-57 below.

52. The kind-of-activity unit differs from the establishment in that there is no restriction in respect of the geographical area in which a given kind of activity is carried on by a single legal entity. In certain instances, the availability of data on a kind-of-activity-unit basis may suggest the employment of this unit in industrial inquiries rather than the establishment. For example, in some cases in the more-frequent-than-annual inquiries, data on fixed capital formation, stocks, new orders and sales may be available easily in respect of kind-of-activity units but not of establishments; at the same time, interest in the classification of the data according to area or size of establishment may be minimal. More generally, the kind-of-activity unit may, for many purposes, be considered a suitable alternative to the establishment in those countries where the larger multi-establishment enterprises organize their records on this basis. If the kind-of-activity unit is used in such cases, it would, however, be useful to indicate the relationship between these units and the units used in other inquiries of the system.

53. In addition to the production units, many businesses also have units engaged in ancillary activities. Ancillary units provide non-durable goods or services primarily, or exclusively, for the use of their parent establishments. These goods and services do not become a physical part of the output of the parent establishments and are customarily provided by subsidiary and supporting activities that are an integral part of the activities of most establishments. The clearest example of an ancillary unit is a central administrative office. Other examples of ancillary units are warehouses, garages, repair shops or electric power plants that primarily serve their parent establishments. Classification of these ancillary units may involve making distinctions according to function and not kind of activity as in ISIC.

54. If the function is carried out for the benefit of a single establishment, the activities of the ancillary unit and the resources involved in the activities should be included as an integral part of the activities and resources of the parent establishment. However, where the main activities of the establishment and the supporting ancillary activities are located in different geographical areas (in terms of the areas used for statistical purposes), it will be desirable to gather separate data in respect of the ancillary unit concerning the items to be classified according to these geographical areas. As a result, the number of statistical units in a geographical area tabulation may be greater than the number recorded in summary tabulations. Sometimes it may also be necessary to follow this practice in tabulating other cross-classified data.

55. Where ancillary activities are organized in support of two or more establishments of a multi-establishment enterprise, they constitute a central ancillary unit. If the required data can be supplied in respect of this unit, it might be treated as a separate establishment. It should in general be classified in the same category of ISIC as the predominant kind of activity of the establishments it serves. Similarly, a large separately located ancillary unit, such as an electricity power plant for which the appropriate data may be gathered, might be treated as a separate establishment though it serves a single establishment only.

56. Secondary activities are those carried out by an establishment that do not fall into the same category of the industrial classification as the major activities of the establishment and that cannot be considered ancillary activities.

57. It is of some importance to distinguish clearly between the treatment of secondary and ancillary activities in defining the establishment in practice. Units engaged in ancillary activities should not be classified according to their own activity and should be treated as separate establishments only for certain purposes (see para. 54). On the other hand, units engaged in secondary activities should normally be treated as separate establishments and classified according to their own activity if the activity is significant and if records permit. If the activity is of minor importance it should be dealt with as part of the activity of the establishment in exactly the same way as the main activity. However, an attempt should be made at some stage to measure the extent of secondary activities included in the total industry activity. This will be obvious if homogeneity ratios (defined in para. 74 (g)) are established.

G. Kind-of-activity (industry) classification

58. The kind-of-activity characteristic is the principal indicator by which all other characteristics of the statistical unit are arrayed. The classification recommended for this purpose is the 1968 version of ISIC. 12/ The classification of the establishment by kind of activity is determined by the group of ISIC in which the major activity, or class of activities, of the establishment is included. The activities of the establishment should, in general, be determined from the products it sells, ships or transfers to other establishments, or from the services it renders to other establishments. Ideally, the principal products or services of the establishment should be ascertained by reference to the value added to the products sold or services rendered. In practice, however, it is generally impossible to obtain this information for individual products or services and it becomes necessary to adopt some other criterion that may be expected to give

approximately the same results. It is therefore recommended that, in most cases, the major kind of activity, or class of activities of the establishment should be determined by the proportion of the gross output of the establishment that is attributable to the goods or services associated with this kind of activity. The principal portion of the gross output of the establishment should be accounted for by these goods or services.

59. Instances may arise where considerable proportions of the activities of an establishment are included in more than one ISIC group. The number of such cases should be small, since the scope of each of the groups corresponds to the combination of activities normally found in these establishments. These cases may result from the vertical integration of activities - for example, tree-felling combined with saw-milling, a clay pit combined with a brickworks or the production of synthetic fibres combined with a textile mill; or from the horizontal integration of activities that cannot be segregated into separate establishments - for example, the sale at retail of shoes purchased from others, as well as shoes made by the establishment itself, or the manufacture of bakery products combined with the manufacture of chocolate confectionery. In either situation, the only practical approach is to classify the establishment in the ISIC group that covers the goods or services accounting for the preponderant part of its gross output. In many instances of vertical integration, practically the only goods or services included in gross output will be the end products of the establishment. The establishment would therefore be classified in terms of these products. Thus, an establishment combining tree-felling with saw-milling would be classified in terms of saw-milling; a clay pit combined with a brickworks would be classified in terms of brickmaking.

60. In those cases where a national industrial classification system differs from ISIC, the national system should be convertible to ISIC at the major group (three-digit) level and it is desirable that it also be convertible at the group (four-digit) level. The national classifications of the countries of the European Communities have generally been aligned with both ISIC and NACE (General Industrial Classification of Economic Activities within the European Communities).

B. The role of the enterprise

61. Reference is frequently made in the present publication to the enterprise and enterprise-type data. The term "enterprise" is sometimes used for a single autonomous legal unit and sometimes for a group of companies under common ownership and control. International recommendations for enterprise statistics have not yet been formulated, and it is not the intention here to establish guidelines in this area, but merely to review the ways the enterprise, however defined, might be used to supplement establishment statistics.

62. In practice, it would appear that the most successful attempts to integrate establishment-enterprise activity have been accomplished by using the enterprise as the collection agent. In this approach, enterprises are classed as single-establishment or multi-establishment. The single-establishment enterprise receives a complete questionnaire covering all items of data. The multi-establishment enterprise receives an establishment questionnaire covering selected items of data for each of its constituent establishments, plus an enterprise questionnaire. The enterprise questionnaire calls for reporting the items of data omitted from the establishment questionnaire and may also allow for the consolidation of key items from the establishment questionnaire for verification purposes.

63. The determination of whether the items of data are appropriate at the establishment or enterprise level is made by the national authorities, but the ultimate responsibility for providing complete returns rests with the enterprise. For example, in some cases items included in the establishment return may better be completed at the enterprise level, either by apportionment or based on enterprise records. Usually items requiring such treatment are contained in the enterprise questionnaire, which can be used for establishment data only through the use of estimation. Also, for small single-establishment enterprises, it is only feasible to collect a limited amount of data. Estimates, therefore, have to be made for the items omitted for these enterprises.

64. Other practices utilize both the establishment and the enterprise as the reporting unit in separate inquiries, sometimes covering different aspects of activity. For example, the establishment may be used for employment data and the enterprise for financial information. In this practice, usually only the larger enterprises are covered. The enterprise may be required to provide information by some subdivision, such as kind of activity, which provides a basis for estimation at the establishment level. In many situations, only larger enterprises are surveyed on a periodic basis and establishment activity is measured only infrequently in economic censuses, which are usually limited in the data collected.

65. Most of these practices, where carefully carried out, will provide adequate information for internationally comparable estimates of total industrial activity and will also be useful for national accounting purposes. They will not, of course, by themselves provide exact geographical detail and may be imprecise at the kind-of-activity level.

II. ITEMS OF DATA TO BE COLLECTED AND STATISTICS TO BE PUBLISHED

A. Data to be collected

66. Table 1 below contains the recommendations for the items of data to be collected in a complete internationally comparable industrial statistics programme. A number of the items listed are derived from other items recommended for collecting.

67. In most cases first, second or third priorities have been assigned to the items, represented in table 1 by the corresponding numerals. The priorities are defined in paragraph 11 above. If a priority numeral does not appear in the column, the item is not strongly recommended for collection under the industrial statistics programme. Priorities are assigned to derived items (items usually calculated by the statistical office from other information on the questionnaire) in order to emphasize the fact that the inquiry should in some way yield this information.

68. The choice of items and priorities is based on a consideration of the relative usefulness of, or the need for, the statistics of which the item is part (or the whole) and the cost and difficulties of gathering the items. It is recognized, however, that needs and circumstances in this respect will vary from country to country and that some modification of the priorities indicated may be required in specific cases.

69. In order to illustrate the items of data that are considered of the highest priority - that is, those items that all countries should endeavour to collect and publish - the Statistical Commission at its twenty-second session, suggested that an additional table listing only the first-priority items to be collected should be added. 13/ Table 2 has been included in response to that request.

Table 1. Items of data that should be collected

Code	Item of data	Priority for collection <u>a/</u>
1.	<u>Statistical unit</u>	
1.1	Location	1
1.2	Period of operation	1
1.3	Type of economic organization	
1.31	Single-establishment enterprise	1
1.32	Multi-establishment enterprise	1
1.4	Type of ownership <u>b/</u> and legal organization	
1.41	Publicly owned	2
1.41.1	by central government	3
1.41.2	by state and local government	3
1.42	Privately owned	2

Table 1 (continued)

Code	Item of data	Priority for collection a/
1.42.1	Unincorporated	2
1.42.2	Incorporated (except co-operatives)	2
1.42.3	Co-operative	2
1.5	Origin of ownership	
1.51	National	2
1.52	Foreign	2
2.	<u>Employment</u>	
2.1	Total number of persons engaged in a single period	1
2.11	Working proprietors	1
2.11.01	Male	
2.11.02	Female	
2.12	Unpaid family workers	1
2.12.01	Male	
2.12.02	Female	
2.13	Employees	1**
2.13.01	Male	1
2.13.02	Female	1
2.13.1	Operatives	2
2.13.11	Male	3
2.13.12	Female	3
2.13.2	Other employees	2
2.13.21	Male	3
2.13.22	Female	3
2.2 c/	Average number of persons engaged	2*
2.21 d/	Employees	3*
2.21.1	Operatives	2*
2.21.2	Other employees	3*
2.3	Number of homeworkers on the pay-roll	
2.31	In a single period	2
2.31.1	Male	3
2.31.2	Female	3
2.32	Average	3*
3.	<u>Time worked e/</u>	
3.1	Hours worked by employees	3

Table 1 (continued)

Code	Item of data	Priority for collection a/
3.11	Hours worked by operatives	2
3.12	Hours worked by other employees	3
3.2	Days worked by employees	3
3.21	Days worked by operatives	2
3.22	Days worked by other employees	3
4.	<u>Compensation of employees</u>	
4.1	Wages and salaries of employees	1**
4.10.1	Male	3
4.10.2	Female	3
4.11	Wages and salaries of operatives	2
4.11.1	Male	3
4.11.2	Female	3
4.12	Wages and salaries of other employees	2
4.12.1	Male	3
4.12.2	Female	3
4.2	Remuneration of homeworkers on the pay-roll	3
4.3	Payments to directors of incorporated enterprises for their attendance at meetings	
4.4	Employers' social security and other selected expenditures on behalf of employees	3
4.4(i)	Of which, statutory social security contributions	2
5.	<u>Value of shipments, receipts for services and other revenue</u>	**
5.1	Value of shipments of goods produced by the establishment, including transfers to other establishments of the same enterprise	1
5.1(i)	Quantity and value of individually important products	1
5.11	Shipments to other enterprises	2
5.12	Transfers to other establishments of the same enterprise	2
5.2	Value of goods shipped in the same condition as received, including transfers to other establishments of the same enterprise	1
5.21	Shipments to other enterprises	2
5.22	Transfers to other establishments of the same enterprise	2

Table 1 (continued)

Code	Item of data	Priority for collection a/
5.3	Receipts for industrial work done or industrial services rendered to others, including other establishments of the same enterprise, covering	1
5.30.1	Contract and commission work	1
5.30.1(i)	Of which, for units not residing in the country	
5.30.2	Repair, maintenance and construction work	1
5.30.3	Installation work	2
5.30.4	Research and development work of an industrial nature	2
5.31	Industrial services rendered to other enterprises	2
5.32	Industrial services rendered to other establishments of the same enterprise	2
5.4	Value of own-account fixed assets	1
5.9	Other revenue	
5.91	Revenue from the rental or lease of industrial equipment and buildings	
5.99	Other revenue	
6.	<u>Purchases or receipts of goods and services</u>	
6.1	Purchases or receipts of materials and supplies for production, including goods received from other establishments of the same enterprise, covering	1
6.10.1	Quantity and cost of individually important materials	1
6.10.2	Containers and packaging materials	1
6.10.3	Fuels and electricity	1
6.10.3(i)	Quantity and cost of individual fuels purchased	1
6.10.3(ii)	Quantity and cost of electricity purchased	1
6.10.3(iii)	Quantity of electricity generated	1
6.10.3(iv)	Quantity of electricity sold	1
6.10.3(v)	Total energy consumed	1*
6.10.4	Materials for own-account fixed assets and repair work	3
6.11	Purchases or receipts of materials and supplies from other enterprises	1
6.12	Value of materials and supplies received from other establishments of the same enterprise	2

Table 1 (continued)

Code	Item of data	Priority for collection <u>a/</u>
6.2	Purchases or receipts of goods to be shipped in the same condition as received	1
6.21	Goods purchased from other enterprises	2
6.22	Goods received from other establishments of the same enterprise	2
6.3	Cost of industrial services received, including services from other establishments of the same enterprise, covering	1
6.30.1	Contract and commission work	1
6.30.2	Repair and maintenance work	1
6.31	Cost of industrial services received from other enterprises	2
6.32	Cost of industrial services received from other establishments of the same enterprise	2
6.4	Amounts paid for the outward transport by outside organizations of goods owned by the statistical unit	1
6.9	Other costs	
6.91	Of which, expenses for renting capital goods and non-residential buildings	
7.	<u>Value of stocks</u>	
7.0	Total stocks	
7.01	At the beginning of the year	1
7.02	At the end of the year	1
7.03	Change (plus or minus)	1*
7.1	Stocks of materials, fuels and supplies	
7.11	At the beginning of the year	1
7.11(i)	Quantity and value of individually important materials, etc.	3
7.12	At the end of the year	1

Table 1 (continued)

Code	Item of data	Priority for collection a/
7.12(i)	Quantity and value of individually important materials, etc.	3
7.13	Change (plus or minus)	1*
7.2	Work in progress	
7.21	At the beginning of the year	2
7.22	At the end of the year	2
7.23	Change (plus or minus)	2*
7.3	Stocks of finished goods	
7.31	At the beginning of the year	1
7.31(i)	Quantity and value of individually important products	3
7.32	At the end of the year	1
7.32(i)	Quantity and value of individually important products	3
7.33	Change (plus or minus)	1*
7.3.1	Stocks of finished goods manufactured by the unit	
7.3.1(i)	At the beginning of the year	2
7.3.1(ii)	At the end of the year	2
7.3.1(iii)	Change (plus or minus)	2*
7.3.2	Stocks of finished goods to be shipped in the same condition as received	
7.3.2(i)	At the beginning of the year	2
7.3.2(ii)	At the end of the year	2
7.3.2(iii)	Change (plus or minus)	2*
8.	<u>Indirect taxes and subsidies</u>	
8.1	Indirect commodity taxes (excluding customs and import duties), covering	

Table 1 (continued)

Code	Item of data	Priority for collection a/
8.11	Net value-added tax, calculated as	1*
8.11(i)	Value-added tax invoiced by the unit less	1
8.11(ii)	Deductible value-added tax, other than on purchases of fixed capital	1
8.12	Other indirect commodity taxes, covering	2
8.12(i)	Turnover, export and sales taxes	
8.12(ii)	Consumption, excise and luxury taxes	
8.2	Indirect non-commodity taxes	2
8.3	Subsidies	2
9.	<u>Census and gross output</u>	
9.1	Census or gross output in producers' prices	
9.11	Census output in producers' prices	1*
9.12	Gross output in producers' prices	
9.2	Census or gross output in approximate factor values	
9.21	Census output in approximate factor values	2*
9.22	Gross output in approximate factor values	
10.	<u>Census input and intermediate consumption</u>	
10.1	Census input	1*
10.2	Intermediate consumption	
11.	<u>Census value added and total value added</u>	
11.1	Census or total value added in producers' prices	
11.11	Census value added in producers' prices	1*
11.12	Total value added in producers' prices	
11.2	Census or total value added in approximate factor values	

Table 1 (continued)

Code	Item of data	Priority for collection a/
11.21	Census value added in approximate factor values	2*
11.22	Total value added in approximate factor values	
12.	<u>Consumption of fixed capital</u>	
13.	<u>Gross fixed capital formation</u>	
13.0	Total gross fixed capital formation	1
13.00.1	Land and land improvements	1
13.00.2	Buildings and other construction work	1
13.00.3	Transport equipment	1
13.00.4	Machinery and other equipment	1
13.1	Cost of new and used fixed assets	1
13.10.1	Land and land improvements	1
13.10.2	Buildings and other construction work	1
13.10.3	Transport equipment	1
13.10.4	Machinery and other equipment	1
13.11	Cost of new fixed assets	
13.11.1	Land improvements	
13.11.2	Buildings and other construction work	
13.11.3	Transport equipment	
13.11.4	Machinery and other equipment	
13.12	Cost of used fixed assets	
13.12.1	Land	
13.12.2	Buildings	
13.12.3	Transport equipment	
13.12.4	Machinery and other equipment	
13.2	Sales of used fixed assets	1

Table 1 (continued)

Code	Item of data	Priority for collection <u>a/</u>
13.21	Land	1
13.22	Buildings	1
13.23	Transport equipment	1
13.24	Machinery and other equipment	1
14.	<u>Capacity of installed power equipment</u>	
14.1	Prime movers	
14.11	Of which, prime movers not driving electric generators	
14.2	Electric motors	
14.21	Of which, electric motors driven by purchased electricity	
14.3	Generators	
15.	<u>Orders</u>	
15.1	Net new orders received	
15.2	Unfilled orders at the end of the inquiry period	

* This item will often be derived by the statistical office from other items of collected data, although in some cases countries may prefer to include the item on the questionnaire, for example, to verify the accuracy of other figures supplied.

** Minimum-programme item.

a/ For definitions of priorities, see para. 11 above.

b/ In countries where the co-operative form of organization is regarded as a type of ownership, a separate category for establishments of this kind should be included.

c/ $2.2 = 2.11 + 2.12 + 2.21.$

d/ If item 2.21.2 is not collected, an approximation of the average number of employees (item 2.21) may be calculated as $2.21.1 + 2.13.2.$

e/ "Hours worked" is the preferred measure; "days worked" is provided as an alternative.

Table 2. First-priority items recommended for collection

Code	Item of data
1.	<u>Statistical unit</u>
1.1	Location
1.2	Period of operation
1.3	Type of economic organization
1.31	Single-establishment enterprise
1.32	Multi-establishment enterprise
2.	<u>Employment</u>
2.1	Total number of persons engaged in a single period
2.11	Working proprietors
2.12	Unpaid family workers
2.13	Employees
2.13.01	Male
2.13.02	Female
4.	<u>Wages and salaries</u>
4.1	Wages and salaries of employees
5.	<u>Value of shipments, receipts for services and other revenue</u>
5.1	Value of shipments of goods produced by the establishment, including transfers to other establishments of the same enterprise
5.1(i)	Quantity and value of individually important products
5.2	Value of goods shipped in the same condition as received, including transfers to other establishments of the same enterprise
5.3	Receipts for industrial work done or industrial services rendered to others, including other establishments of the same enterprise, covering:
5.30.1	Contract and commission work
5.30.2	Repair, maintenance and construction work

Table 2 (continued)

Code	Item of data
5.4	Value of own-account fixed assets
6.	<u>Purchases or receipts of goods and services</u>
6.1	Purchases or receipts of materials and supplies for production, including goods received from other establishments of the same enterprise, covering:
6.10.1	Quantity and cost of individually important materials
6.10.2	Containers and packaging materials
6.10.3	Fuels and electricity
6.10.3(i)	Quantity and cost of individual fuels purchased
6.10.3(ii)	Quantity and cost of electricity purchased
6.10.3(iii)	Quantity of electricity generated
6.10.3(iv)	Quantity of electricity sold
6.10.3(v)	Total energy consumed
6.11	Purchases or receipts of materials and supplies from other enterprises
6.2	Purchases or receipts of goods to be shipped in the same condition as received
6.3	Cost of industrial services received, covering:
6.30.1	Contract and commission work
6.30.2	Repair and maintenance work
6.4	Amounts paid for the outward transport by outside organizations of goods owned by the statistical unit
7.	<u>Value of stocks</u>
7.0	Total stocks
7.01	At the beginning of the year
7.02	At the end of the year
7.03	Change (plus or minus)

Table 2 (continued)

Code	Item of data	
7.1	Stocks of materials, fuels and supplies	1,000.00
7.11	At the beginning of the year	
7.12	At the end of the year	
7.13	Change (plus or minus)	
7.3	Stocks of finished goods	
7.31	At the beginning of the year	
7.32	At the end of the year	
7.33	Change (plus or minus)	
8.	<u>Indirect taxes</u>	
8.1	Indirect commodity taxes (excluding customs and import duties), covering:	
8.11	Net value-added tax, calculated as	
8.11(i)	Value-added tax invoiced by the unit less	
8.11(ii)	Deductible value-added tax, other than on purchases of fixed capital	
9.	<u>Census output</u>	
9.11	Census output in producers' prices	
10.	<u>Census input</u>	
10.1	Census input	
11.	<u>Census value added</u>	
11.11	Census value added in producers' prices	
13.	<u>Gross fixed capital formation</u>	
13.0	Total gross fixed capital formation	
13.00.1	Land and land improvements	
13.00.2	Buildings and other construction work	

Table 2 (continued)

Code	Item of data
13.00.3	Transport equipment
13.00.4	Machinery and other equipment
13.1	Cost of new and used fixed assets
13.10.1	Land and land improvements
13.10.2	Buildings and other construction work
13.10.3	Transport equipment
13.10.4	Machinery and other equipment
13.2	Sales of used fixed assets
13.21	Land
13.22	Buildings
13.23	Transport equipment
13.24	Machinery and other equipment

1. Distinction between the industrial statistics programme and the extension of the programme

70. The distinction between the industrial statistics programme and the extension of the programme to bring census value added closer to total value added is somewhat arbitrary, since the 1968 recommendations already included some information about non-industrial activities. For instance, activities connected with repair and maintenance (generally part of construction, ISIC major division 5) and, as a secondary establishment activity, goods resold without further processing (part of wholesale and retail trade, ISIC 6) were specified in the 1968 recommendations.

71. It may be difficult at the establishment level to account fully for all items enumerated under the programme. On the other hand, some of the items identified as being outside the programme may be readily available in some circumstances. Minor deviations in this respect will not be significant but, for international comparability, caution should be exercised in order that the results obtained may be readily evaluated.

2. Kind-of-activity classification

72. Table 1 indicates that all items of data should be classified by kind of activity. If this classification is to provide an adequate basis for international

analysis of the data, the industrial classification used should be convertible to ISIC. The more detailed the classification employed, the more useful are the published statistics for both national and international purposes. The level of detail at which the data are shown, however, will depend in any particular case on the number of establishments falling within each industrial category, the legal limitations on disclosure of data concerning individual establishments and whether sampling techniques are used that limit the possibility of making reliable estimates for the more detailed industrial categories.

3. Cross-classifications

73. In addition to the recommended data on number of establishments by kind of activity cross-classified by location, size, type and so on, a few other key items of data will usually be cross-classified according to these characteristics - for example, number of persons engaged, gross output and value added. For international comparisons, the size classification by these key items is the most relevant. For such tabulations, the industry classification should, as mentioned in paragraph 72 above, be convertible to ISIC; the level of detail shown, however, may have to be curtailed in view of the dimension added by the introduction of the cross-classification.

B. Inquiry description to be published

74. To enable the users of the published statistics to evaluate their comparability - both with the statistics from other inquiries in the same country and with the statistics of other countries - and to assess their reliability, the following information should be published:

(a) A description of the scope of the inquiry - that is, which industrial and other activities were included in the field of inquiry, and a definition of the statistical unit in terms of which the field of inquiry was defined and the items of data were gathered.

(b) A description of the coverage of the survey - that is, whether industrial units of all kinds (size, type of ownership, type of legal organization and so on) were included.

(c) A description of the methods of covering the field of inquiry - that is, whether by direct collection (mail or field enumeration), administrative reports or sampling (including a description of the sample design used and estimates of probable sampling errors). The description might also include an evaluation of the completeness of coverage attained.

(d) Definitions of the items published. The definitions should cover both the items of data that have been collected and those that have been derived by the statistical office from other items of collected data. Whether output is in producers' prices or in factor values should be indicated. A copy of the questionnaire and of the basic instructions used should be included in the published report.

(e) The extent and treatment of any non-response, including:

(i) The number and, if possible, estimates of the size and industry of units that have failed to respond; whether or not the figures published include estimates for non-response should be clearly stated;

(ii) The extent of the non-response to particular questions for which no estimates have been or could be made.

(f) A description of the industrial and other classifications used.

(g) A measure of the extent to which the data shown for each published industrial classification category relate to activities that, had they been separately reportable, would have been classified in other categories of the classification. One such measure is the homogeneity ratio, that is, the ratio of the "value of output, by the units classified to the industry category indicated, of products and services that are properly classifiable to that category" to the "total value of output of the same units".

75. Special care should be taken to ensure the comparability of the data over time in order that valid time series can be established. It is therefore necessary to take adequate steps to ensure comparability where changes occur in

(a) classification, (b) scope and coverage and (c) standards and methods used. If significant changes do occur, comparisons should be made possible by arranging for the items of data in question to be published for one period both ways.

III. DEFINITION OF ITEMS OF DATA TO BE COLLECTED AND STATISTICS TO BE PUBLISHED

76. In the present chapter, summary definitions are given of all items of data recommended for collection and publication in chapter II, together with additional items of data derived from the basic system. The references to the items are in tables 1 and 2 above.

Item 1. Statistical unit

77. The inquiry will make it possible to publish information about the number and size distribution of establishments. There are alternative methods of counting the number of establishments, but the most meaningful figure, when all the data obtained from an industrial inquiry are published together, is clearly the number of establishments to which the data relate - that is, the number of establishments making usable returns plus any for which estimates are made. Other alternatives, which may be of some interest, are:

(a) The number of establishments making usable returns;

(b) The number of establishments active at any time (or at a particular date) in the inquiry period and falling within the scope and coverage of the inquiry (this may not be available and may or may not be the same as the count recommended);

(c) The number of both active and inactive establishments in existence at any time (or at a particular date) in the inquiry period and falling within the scope and coverage of the inquiry.

78. Where small establishments are enumerated on a sample basis, there might be a need, at least at infrequent intervals, for data on the total population of such establishments, the number of establishments making returns and, if possible, the sampling fraction.

79. The distribution of establishments by kind of activity (industry) and size provides an important indication of the structure of industry. The size of the establishment should be primarily defined in terms of the average number of persons engaged in the establishment during the inquiry period, that is, item 2.2 (see para. 107 above). The size classification should consist of the following classes, measured in terms of the average number of persons engaged: 1-4, 5-9, 10-19, 20-49, 50-99, 100-199, 200-499, 500-999, 1,000 and over. Unless publication of the data at this level of detail is not possible, this should be considered a minimum division of the over-all range.

80. A definition of size based on the number of persons engaged is recommended because of its simplicity, general applicability and usefulness. It is recognized, however, that other criteria of size, such as value added or gross receipts may also be of interest for particular purposes, either alone or in conjunction with the recommended criterion.

Location (item 1.1)

81. The physical location of the establishment should be defined by the site of the plant and not by the mailing address. The geographical classification employed in the tabulations should normally distinguish between major economic regions or administrative divisions of the country.

82. It is also important for practical purposes to obtain the recognized address to which written communications may be sent and the name and telephone number of the person responsible for providing the information. The address may be that of the physical location of the establishment or a separately located central office. It should be the address to which any queries concerning the establishment can be referred. In some cases, it may be necessary to correspond with both the establishment and the central office.

Period of operation (item 1.2)

83. The questionnaire should request the period during which the establishment has been in operation. This information will help in interpreting returns made by establishments that are affected by seasonal factors and those made by establishments that began or ceased operations during the census period.

Type of economic organization (item 1.3)

84. This item is intended to indicate simply whether the establishment is the sole establishment of the enterprise or is part of a multi-establishment enterprise. If further detail is required on this aspect of the industrial structure, multi-establishment enterprises might be divided into classes according to the number of their constituent establishments or by the criteria used for classifying establishments (employment, value added).

85. In order to identify the enterprise to which the establishment belongs, the name of the enterprise of ownership and the address of its central office should be requested. Similarly, the central office of the legal entity might be asked whether the firm is owned or controlled by another legal entity and, if so, to supply the name and address of the central office of that legal entity. For practical purposes, it is also useful to request from the central offices a list of subsidiary legal entities and establishments.

Type of ownership and legal organization (item 1.4)

86. This item is designed to distinguish between public and private ownership and to identify the legal organization, particularly of privately owned units. For international reporting, it is recommended that a public enterprise be defined as an enterprise that is owned and/or controlled by the Government. Privately owned units are those owned and/or controlled by private parties. Some countries regard the co-operative form of organization as a type of ownership rather than as a type of legal organization, and it is suggested that establishments of this kind should be shown - in these countries - as a separate category in the classification by type of ownership.

87. In the category of publicly owned units, a distinction might be made conforming to the main divisions of public ownership in each country, which would normally differentiate between central government ownership, ownership by state or provincial governments and ownership by local authorities. For international comparisons, only two levels are required, namely "central government" and "state and local government". The main categories (departmental enterprises, corporate enterprises and unincorporated government enterprises) of public ownership may be distinguished where these are important.

88. Privately owned units should be defined by type of legal organization in terms of the legal form of the legal entity directly owning the unit. The categories used should reflect national law and custom. The minimum classification distinguishes between unincorporated units, incorporated units (except co-operatives) and co-operatives. Further detail, for example, of unincorporated units by sole proprietorships and ordinary (unlimited liability) partnerships and incorporated units by limited liability partnerships, joint stock companies and corporations might be introduced on the basis of national circumstances and requirements.

89. Some countries may wish to distinguish units that correspond to the SNA definition of "quasi-corporate enterprises". These will represent relatively large unincorporated units that have complete profit-and-loss statements and complete balance-sheet accounts on the financial assets and liabilities, as well as the real assets, involved in the business.

Origin of ownership (item 1.5)

90. This item is intended to distinguish between nationally owned and foreign-owned establishments and is considered to be of particular significance in the developing countries. Foreign-owned establishments will usually be further identified by the nationality of ownership.

Other characteristics of the statistical unit

91. The characteristics set out in paragraphs 81-90 above are not exhaustive but represent the most important ones from the viewpoint of international comparability, as well as those considered to be of significant national interest. The System of National Accounts suggests that a distinction between modes of production and between rural and urban areas may be of value in compiling some national accounting data, but no one set of international guidelines has yet been established for these categories.

Item 2. Employment

Total number of persons engaged in a single period (item 2.1)

92. The number of persons engaged in the establishment is defined as the total number of persons who work in or for the establishment, including working proprietors, active business partners and unpaid family workers, as well as persons working outside the establishment when paid by and under the control of the establishment - for example, sales representatives, outside service engineers and repair and maintenance personnel. Also included are salaried managers and salaried directors of incorporated enterprises. The total should include part-time workers and seasonal workers on the pay-roll, persons on short-term leave (sick leave, maternity leave, annual leave or vacation) and on strike, but not persons on indefinite leave, military leave or pension.

93. Excluded are directors of incorporated enterprises and members of shareholders' committees who are paid solely for their attendance at meetings, labour made available to the establishment by other units and charged for, such as contract workers paid through contractors, persons carrying out repair and maintenance work in the establishment on behalf of other units and all homeworkers. (For the treatment of homeworkers, see paras. 108-110 below.)

94. The enumeration may refer to a specified day, pay period or calendar week in the inquiry period. It might be useful to select a period that would coincide with that used for other statistical inquiries into employment and earnings. In selecting a period, consideration may need to be given to seasonal factors.

95. Separate figures for male and female employees should be sought. A breakdown by sex of persons engaged in each status group may be sought as resources permit. Other characteristics might also be of national interest, such as a distinction between part-time, full-time and seasonal workers, between adults and juveniles based on the laws and customs of the country and the nationality composition.

Working proprietors and unpaid family workers (items 2.11 and 2.12)

96. Working proprietors (item 2.11) are defined as all individual proprietors and partners who are actively engaged in the work of the establishment, excluding silent or inactive partners whose principal activity is not carried out regularly in the establishment.

97. Unpaid family workers (item 2.12) are defined as all persons living in the household of the proprietor(s) of the owning enterprise and working in the establishment without regular pay (that is, without an agreed amount to be paid for work done) for at least one third of the normal working time of the establishment. Some countries may find it convenient to specify an absolute minimum time a family member must work in the business, for example, 15 hours per week. In practice it may be necessary to broaden this definition to account for non-household members who work without pay. Persons performing paid work in another enterprise as a principal occupation should not be included. Family workers who receive pay for work performed should be classified as employees.

Employees (item 2.13)

98. This item is defined as all persons who work in or for the establishment and receive pay, in cash or in kind, as a rule at regular intervals - that is, all persons engaged in the establishment, as defined in paragraph 92 above, other than working proprietors and unpaid workers.

99. The employee data should distinguish between operatives and other employees. The object of the subdivision, which is frequently required for productivity studies and in labour negotiations, is to identify those employees most directly associated with the productive, as opposed to the overhead, activities of the unit. The precision with which this distinction can be made depends on the nature of the employment and pay-roll records available for most establishments - that is, the detail of these records and their similarity from one establishment to another.

100. The distinction between operatives and other employees, which has traditionally been used in the recommendations for industrial statistics, was drawn up in the absence of any international standards for determining corresponding categories in labour statistics inquiries. For this reason, it may not be easily assimilated in those countries that have adopted other criteria. Minor deviations in this respect should not unduly affect international comparability.

Operatives (item 2.13.1)

101. This item is defined as all employees who are directly engaged in the production or related activities of the establishment, including any clerical or

working supervisory personnel whose function is to record or expedite any step in the production process. Examples are persons engaged in fabricating, processing or assembling, shop messengers, stokers and shop-cleaning personnel, warehousemen, packers, repairmen, shop-testing and record-keeping personnel, and inspectors. Employees of a similar type engaged in activities ancillary to the main activity of the establishment and persons engaged in truck driving, repair and maintenance and so on should also be considered operatives. (This category is not applicable to the central administrative office of a multi-establishment enterprise.)

102. Distinctions based on form of remuneration (payment on an hourly, daily or piece-rate rather than a monthly basis) or affiliation with specific branches of social security for specific categories of workers may be easier to obtain from pay-roll records and used as acceptable alternatives. In some countries, the terms "wage earners" or "production workers" coincide with business practices.

103. Some countries may wish to include special characteristics of operatives. If so, it is important to limit the categories to those that can be defined precisely and clearly in terms of the usually available employment records. Of particular interest, are the following:

(a) The degree of labour qualification - skilled, semi-skilled, unskilled, apprentice and the like;

(b) The specific functional category - for example, personnel wholly engaged in own-account construction work, fabrication personnel, processing and assembly personnel, transportation and warehousing personnel, repair and maintenance personnel;

(c) Whether employed full-time or part-time;

(d) For establishments engaged in mining activities, underground workers might be shown separately from other operatives. The determination of what constitutes an underground worker should be made according to the laws of each country;

(e) For establishments engaged in the production of electricity, gas or steam, operatives directly engaged in the plant where electricity, gas or steam is produced might be shown separately from other operatives.

Other employees (item 2.13.2)

104. This item is defined as all employees other than those considered as operatives. Where the definition in paragraph 101 above is followed, this category will include administrative, technical and clerical personnel such as salaried managers and directors, laboratory and research workers, clerks, typists, bookkeepers, administrative supervisors, sales persons and the like.

Average number of persons engaged (item 2.2)

105. This item is defined as the average number of employees plus the number of working proprietors and unpaid family workers for a single period. The average number of employees (and the corresponding averages for operatives and other employees) is the arithmetic average of the number of employees in several specific periods of the inquiry period. In general, a time period (calendar week or pay-roll period, rather than a specified day) centred in each quarter is suggested.

106. In some countries, the number included in the category "other employees" remains relatively stable and is therefore enumerated in one period only. Consequently, the average number of employees is calculated as the average number of operatives in several periods plus the number of other employees for a single period. This alternative concept may be used where the circumstances warrant it.

107. The average number of persons engaged serves as the size criterion for the unit (see para. 79 above). If the average number of employees is not available, the total number of persons engaged in a single period should be used as the size criterion.

Homeworkers on the pay-roll (item 2.3)

108. This item is defined as all persons employed by the establishment, in general on a piece-work basis, who work in their own home and whose names appear on the pay-roll.

109. Homeworkers paid by subcontractors are not included; the amounts paid to subcontractors in respect of homeworkers are treated as "Cost of industrial services received" (item 6.3).

110. Homeworkers on the pay-roll should be enumerated for a single period. Where the numbers are significant and fluctuate, it may also be useful to collect the average number in the inquiry periods as defined for employees.

Item 3. Time worked

Hours worked by employees (item 3.1)

111. This item is defined as the total number of hours actually spent by employees at work (and the corresponding numbers for operatives and other employees), including waiting time. Overtime is included and calculated in terms of actual hours spent at work and not in terms of time paid for. Since it is hours worked rather than hours paid for which are to be reported, time spent on vacation, casual or sick leave should be excluded.

112. The following extract from a resolution 14/ concerning statistics of hours of work, adopted on 11 October 1962 by the Tenth International Conference of Labour Statisticians (Geneva, 2-12 October 1962) may be useful:

"(1) Statistics of hours actually worked should include -

- (a) hours actually worked during normal periods of work;
- (b) time worked in addition to hours worked during normal periods of work, and generally paid at higher rates than normal rates (overtime);
- (c) time spent at the place of work on work such as the preparation of the workplace, repairs and maintenance, preparation and cleaning of tools, and the preparation of receipts, time sheets and reports;

- (d) time spent at the place of work waiting or standing-by for such reasons as lack of supply of work, breakdown of machinery, or accidents, or time spent at the place of work during which no work is done but for which payment is made under a guaranteed employment contract;
- (e) time corresponding to short rest periods at the workplace, including tea and coffee breaks.

"(2) Statistics of hours actually worked should exclude -

- (a) hours paid for but not worked, such as paid annual leave, paid public holidays, paid sick leave;
- (b) meal breaks;
- (c) time spent on travel from home to work and vice versa."

In addition, statistics of hours actually worked should exclude hours spent on welfare and union activities, any time spent on travel from the entrance of the establishment to the place of work and time necessary to wash and to change clothes. However, such an elaborate definition may not be needed in an annual industrial questionnaire.

113. Hours worked should be collected with higher priority for operatives than for other employees. No recommendation is included to cover hours worked by working proprietors and unpaid family workers but, where a measure of total labour input is required, these should also be considered.

Days worked by employees (item 3.2)

114. This item is of value because it provides a more precise measure of labour employed than does a count of numbers. It is probably easier to obtain from pay-roll records than are hours worked and is included as an alternative concept.

115. Days worked should refer to the total number of days spent at work and not to days paid for; days spent on vacation, casual or sick leave should be excluded. In addition, it would be useful to ascertain the normal number of working hours per day in the establishment for full-time workers and to collect separately the days worked by part-time workers. Provision is made for the subdivision by employment status.

116. Some countries calculate days worked as full-time equivalent days by converting part-time and overtime hours into work days on the basis of the normal number of hours worked per day. This is analogous to hours worked, as the results can be calculated in hours, and they should be calculated thus for international comparability.

Item 4. Compensation of employees

117. This item is defined in SNA as comprising all payments of wages and salaries by producers to their employees, in kind as well as in cash, and of contributions in respect of their employees to social security and to private pensions, casualty insurance, life insurance and similar schemes. Employees are defined to cover all persons engaged in the activities of incorporated business units and, except for the

proprietors and unpaid family members of proprietors, all persons engaged in the activities of unincorporated businesses. These concepts are followed in the present recommendations, and the concept of employees is consistent with the definition given in paragraph 98 above.

118. The compensation of employees is subdivided into (a) wages and salaries of employees (earnings), in cash and in kind and (b) employers' social security and other selected expenditures on behalf of employees. The definitions adopted for these items, set out below, have been drawn from the International Standard Classification of Labour Cost of the International Labour Organisation.

Wages and salaries of employees (item 4.1)

119. This item includes all payments, whether in cash or in kind, as defined below, made by the employer during the inquiry period in connection with work done by all persons included in the count of employees. Payments made to operatives and other employees should be distinguished, and for both status groups the detail by sex should be obtained.

120. The concept of wages and salaries (earnings), as herein applied, relates to remuneration in cash and in kind paid to employees, as a rule at regular intervals, for time worked or work done together with remuneration for time not worked, such as annual vacation, other paid leave or holidays. Earnings exclude employers' contributions in respect of their employees paid to social security and pension schemes and also the benefits received by employees under these schemes. Earnings also exclude severance and termination pay.

121. Statistics of earnings should relate to employees' gross remuneration, that is, the total before any deductions are made by the employer in respect of taxes, contributions of employees to social security and pension schemes, life insurance premiums, union dues and other obligations of employees. The following items are included: (a) direct wages and salaries; (b) remuneration for time not worked; (c) bonuses and gratuities; (d) housing allowances and family allowances paid directly by the employer; (e) payments in kind.

122. Direct wages and salaries relate to cash remuneration of current work performed and include straight time pay of time-rated workers, incentive pay of time-rated workers, earnings of piece workers (excluding overtime premiums) and premium pay for overtime, late shift and holiday work. Commissions paid to salespersons, even if paid in addition to salary, may be regarded as direct wages and salaries. Direct wages and salaries also include responsibility premiums; dirt, danger and discomfort allowances; cash indemnities; payments under guaranteed wage systems; cost-of-living allowances and other regular allowances.

123. Remuneration for time not worked comprises direct cash payments to employees in respect of public holidays, annual vacations and other time off with pay granted by the employer (for instance, in connection with family obligations, functions of titular office and so on). Severance and termination pay is excluded and placed among social security and other benefits since it most often represents compensation for the loss of employment (as distinguished from payments connected with employment).

124. Bonuses and gratuities cover year-end and seasonal bonuses, profit-sharing bonuses and additional payments in respect of vacation - that is, supplementary to normal vacation pay.

125. Employers in some cases pay housing and family allowances directly to their employees. Such payments are usually regarded as part of wages; earnings statistics should therefore include them.

126. Payments in kind are defined as goods and services furnished to employees free of charge or at markedly reduced cost that are clearly and primarily of benefit to the employees as consumers. They comprise food, drink, fuel and other payments in kind; and cost, other than capital cost, of workers' housing borne by employers (cost for establishment-owned dwellings, cost for dwellings not establishment-owned, other housing costs). ^{15/} Expenditures by employers that are of benefit to them as well as to their employees are not part of compensation of employees but are included under intermediate consumption.

127. The money value of payments in kind should be expressed as equal to the net cost to the employer of the goods or services concerned. Where the employer is unable to report the actual cost incurred, it is convenient to use producers' selling prices or wholesale prices.

Remuneration of homeworkers on the pay-roll (item 4.2)

128. This item covers all remunerations, as defined under "wages and salaries of employees", paid to homeworkers on the pay-roll. The amounts paid to subcontractors and other agents in respect of homeworkers are not recorded here, but under the item "Cost of industrial services received" (item 6.3).

Payments to directors of incorporated enterprises solely for their attendance at meetings (item 4.3)

129. This item includes all payments made to directors of incorporated enterprises and members of shareholders' committees for attendance at meetings.

Employers' social security and other selected expenditures (item 4.4)

130. This item covers payments made by the employer on behalf of his employees, which are normally considered in national accounting practice to form part of employees' income but not of earnings. The following items are included: (a) statutory social security contributions (item 4.4 (i)); (b) collectively agreed, contractual and non-obligatory contributions to private pension and insurance schemes; (c) direct payments to employees in respect of absence from work owing to sickness, maternity or employment injury, to compensate for loss of earnings; other direct payments to employees comparable to social security benefits; (d) cost of medical care and health services provided by outside organizations; (e) severance and termination pay.

131. Under (a) and (b) in paragraph 130 above are included contributions in respect of the following types of schemes and insurance: old age, invalidity and survivors; sickness, maternity; employment injury; unemployment; family allowance and other employee benefits. Lump-sum grants on retirement are classified under (b).

132. The cost of medical care and health services includes fees, salaries and other payments for services of outside medical personnel.

Labour costs not included in compensation of employees

133. Elements of labour cost that are not regarded as employee income are not included in the concept of compensation of employees. These items cannot be unambiguously regarded as a benefit to the worker and are not generally received by individual employees. As a cost to the employer, they are included in the intermediate consumption of the establishment (item 6.9). Falling within this category are the following:

- (a) Employer's cost for vocational training;
- (b) Employer's cost of welfare services:
 - (i) Cost of canteens and other food services;
 - (ii) Cost of education, cultural, recreational and related facilities and services;
 - (iii) Grants to credit unions and cost of related services for employees;
- (c) Employer's other labour costs:
 - (i) Cost of transport of workers to and from work undertaken by the establishment;
 - (ii) Cost of work clothes;
 - (iii) Cost of recruitment;
 - (iv) Other labour costs;
- (d) Taxes regarded as labour cost.

Item 5. Value of shipments, receipts for services and other revenue

134. The scope of the items included delineates the boundaries set in the national accounts recommendations in respect of the production of goods and services. The industrial statistics programme is defined to include items 5.1-5.4. The remaining item, "Other revenue" (5.9), will normally be applicable only where the programme has been extended to cover the industrial sector in the economy as a whole.

135. Value of shipments is used rather than value of production for two reasons. It should be more readily available in establishment records than value of production and therefore should facilitate data collection in the countries with less developed industrial statistics; it is the concept widely used, or being adopted, by many countries, particularly in Europe. Countries that have traditionally collected data on a production basis, the alternative concept included in the 1968 recommendations, are not expected to make any changes in this respect in the interest of standardization. The concept of census or gross output defined for item 9 calls for stock adjustments, at which point production becomes the standard. Countries that collect data on a production basis will be able to calculate gross output by including only selected stock adjustments.

Value of shipments of goods produced by the establishment, including transfers to other establishments of the same enterprise (item 5.1)

136. This item includes the value of shipments, including transfers during the inquiry period to other establishments of the same enterprise, of all goods made by the establishment, whether in the inquiry period or in previous periods (that is, all goods for which the establishment relinquished control during the period; all goods sent abroad for sale or processing should be included even though legal title may not yet have passed). Included as goods produced by the establishment are goods produced by other organizations from materials supplied by the establishment.

137. The data obtained should cover all shipments of products classified to the industry, of products classified to other industries and of scrap arising from the production process; and all sales of electricity, gas and steam, whether purchased or produced by the establishment.

138. If the establishment engages in the production of goods under contract with a long-term production cycle, progress payments received under such contracts should be included for construction work but not for the production of machinery and equipment. For the latter, progress payments should be recorded in the financial accounts as trade advances and the value of the work in progress should be included in the stocks of the establishment. For construction work, the progress payments received should be reported instead of the value of sales. Partially completed and finished construction works should not be recorded in the stocks of the establishment.

139. The valuation of goods shipped should be at the establishment price charged to the customer, whether ex-factory or delivered, including all charges invoiced to clients, even if separately, for expenses relating to transport (whether carried out by the establishment with its own transport facilities or by outside organizations), lost packaging and the like. Price rebates and discounts and allowances on returned goods allowed to the customer and the value of returned packaging should be deducted. This includes cash discounts where netted off sales in sales records. The valuation should include all duties and taxes imposed on products when they leave the factory, with the exception of the value-added tax invoiced by the producer to the client, where the value-added tax system is applicable.

140. In principle, shipments to other establishments within the same enterprise should be valued as though sold. In practice, however, it may be necessary to accept the book value of such transfers. Where both establishments make returns, the receiving plant should report the same items as purchases at the same value as the sales of the shipping plant.

Quantity and value of individually important products (item 5.1 (i))

141. Figures should be obtained both for the total value of the products and for the quantity and value of individually important products. This is best accomplished by designing questionnaires tailored to the individual industries, which include a pre-printed list of the important products of each industry. Where the establishment's range of activities encompasses several successive manufacturing stages, it may be useful to collect supplementary information on the quantity of selected important intermediate products produced and consumed within the establishment. These data are particularly useful if the intermediate products in

question are the final products of many other establishments or are widely used as purchased materials. To measure production, it may be desirable to obtain the quantity and value of individually important stocks of the products at the beginning and end of the inquiry period.

Shipments to other enterprises (item 5.11)

142. This item includes sales or shipments of goods produced by the establishment, as defined under item 5.1, to other enterprises.

Transfers to other establishments of the same enterprise (item 5.12)

143. This item covers transfers from the producing establishment to another establishment of the same enterprise not covered by the return, including transfers to wholesale and retail selling organizations of the enterprise for which separate accounts are kept. Transfers to overseas branches of the enterprise should be included.

Value of goods shipped in the same condition as received, including transfers to other establishments of the same enterprise (item 5.2)

144. The valuation of these goods should be the same as defined for goods produced by the establishment (item 5.1). The goods may either be sold to other enterprises (item 5.21) or transferred to other establishments of the same enterprise (item 5.22). The occasional resale, without transformation, of goods bought by the unit for its own use as raw material should be included.

Receipts for industrial work done or industrial services rendered to others, including other establishments of the same enterprise (item 5.3)

145. This item covers the value, at actual invoice prices, of industrial work done and services rendered to other enterprises (item 5.31) or to other establishments of the same enterprises (item 5.32). The invoice prices should include any taxes other than the value-added tax. The amounts charged for materials supplied by the establishment in the course of the work should also be included. Services provided to other establishments within the same enterprise should be valued as though sold. If this is not possible, the actual costs should be reported. The following categories should be covered:

5.30.1 Contract and commission work;

5.30.2 Repair, maintenance and construction work;

5.30.3 Installation work;

5.30.4 Research and development work of an industrial nature.

146. Contract and commission work consists of processing, transforming or assembling the materials supplied by the units that order the work. Sales commissions are not included.

147. A subcategory (item 5.30.1 (i)) has been provided to permit the measurement of industrial work performed for units not residing in the country. This item is of particular significance in some developing countries.

Value of own-account fixed assets (item 5.4)

148. This item includes the cost of all equipment (machinery, plant and the like), buildings and other constructions manufactured or built by the establishment for its own use during the inquiry period and having a life expectancy of more than one year, as well as the costs of extensions, alterations, improvements and major repairs that are carried out by the inquiry unit itself with its own labour force and prolong the life or increase the productivity of existing fixed assets. Fixed assets produced for rental or lease should be included. The measurement should be at the time the work is put in place and becomes part of the fixed capital formation of the establishment.

149. The valuation, in principle, should be at the producers' prices of the same commodities sold in the market. However, it will frequently be necessary to impute the valuation at explicit cost, including the cost of labour used during the reference period and the overheads apportionable to the work.

Other revenue (item 5.9)

150. This item covers revenue from activities other than the sale of goods or the rendering of industrial services, which is not always ascertainable at the establishment level. The item is included for those countries that have adopted a system of economic inquiries involving the enterprise, which permits the measurement of the role of industry in the whole economy. The values reported should be the actual amounts received, including taxes other than the value-added tax. Information about revenue from the rental or lease of industrial equipment and buildings is the only item recommended for separate collection:

5.91 Revenue from the rental or lease of industrial equipment and buildings.

5.99 Other revenue. The revenues which should be included are:

(a) Revenue from the operation of cafeterias, hostels, camps and other employee facilities, except dwellings (rent received from employee dwellings should not be included but should be netted off cost of workers' housing under payments in kind);

(b) Commissions received;

(c) Receipts for transport services rendered to others, other than delivery of own products (the latter should be included in the value of shipments (item 5.1));

(d) Receipts for storage of goods, warehousing and the like, including cold storage;

(e) Receipts for the right to use patents, trademarks, copyrights and the like, manufacturing and quarrying rights, technical "know-how";

(f) Dealers' margins and other transfer costs in respect of transactions involving second-hand goods and scrap, land, intangible assets (financial claims, leases, mineral rights, patents); these cover brokers' commissions, legal fees and the like which represent the only output generated in such transactions; the output may be shared by the buyer and seller and, in some cases, may be charged to the buyer;

(g) Any other revenue arising from the production of goods or rendering of services.

151. The following items that do not arise from the production of goods and rendering of services by the inquiry unit should not be included:

- (a) Dividend receipts;
- (b) Interest and discount receipts;
- (c) Revenue from the outright sale of patents and licences;
- (d) Revenue from the sale of land and used capital goods.

Item 6. Purchases or receipts of goods and services

152. The scope of the items described in paragraphs 154-178 below corresponds to item 6 - that is, it delineates the boundaries set in the national accounts recommendations in respect of the intermediate consumption of goods and services. The industrial statistics programme is defined to include items 6.1-6.4. Item 6.9 is normally applicable only where the programme has been extended to cover the industrial sector in the economy as a whole.

153. The standard used for item 6 relates to the purchases of goods rather than their consumption for reasons equivalent to those stated in paragraph 135. Countries that have traditionally collected data on a consumption basis, the alternative concept included in the 1968 recommendations, are not expected to make any changes in this respect. The concept of census input or intermediate consumption defined in item 10 below calls for a stock adjustment factor and, at that point, consumption becomes the standard.

Purchases or receipts of materials and supplies for production, including goods received from other establishments of the same enterprise (item 6.1)

154. This item includes all goods (excluding fixed assets) delivered to the control of the establishment in the inquiry period and owned by the establishment (or by the legal entity to which the establishment belongs). The time of receipt of the goods should be related to the definition of inventories in the sense that goods should be considered as received at the time such goods are entered in the inventory account of the establishment. Alternatively, goods may be considered as received when the establishment has acquired effective control of the goods. In general, this definition coincides with the time of acquisition of title or the time of invoicing, but goods received from abroad should be included even though legal title may not yet have passed.

155. The valuation of goods purchased should be in purchasers' prices - that is, the delivered value at the establishment, including the purchase price, transport charges either invoiced by the producer or by other organizations, the cost of insurance, the value of packaging materials charged for, all taxes and duties on the goods but, where applicable, excluding the deductible value-added tax. Discounts (including cash discounts if netted off purchases in purchase records) or rebates allowed to the purchaser and the value of packaging materials returned to

the suppliers should be deducted. Where transport is carried out by the statistical unit itself, no charges should be imputed since the only cost incurred that is not already covered in other items is the labour cost. Goods received by the establishment from other establishments of the same enterprise should be valued as if purchased. In practice, it will usually be necessary to accept the book values in the accounts of the shipping plant, but where transport of the goods to the recipient establishment is carried out by outside organizations, the costs should be included. Where both establishments make returns, the shipping plant should report the items as sales at the same value. The data obtained should cover the materials that enter directly into the goods produced, which includes all raw materials, pre-fabricated parts (intermediate products), components and so on that are physically incorporated into the products of the establishment. Fuels that enter the product directly should be included, as well as fuels for the generation of electricity and the production of gas and steam, whether for own consumption or for sale; auxiliary materials consumed during the production process, including lubricants, water, explosives, polishes, small tools and appliances, office supplies and similar materials that are normally used up in the production process should be included.

Quantity and cost of individually important materials (item 6.10.1)

156. This item should normally be collected to provide supplementary detail in infrequent and annual inquiries. In the more-frequent-than-annual inquiries, the detail can be limited to those items required for the preparation of index numbers of production or price. In country practice, questionnaires are generally tailored to each industry, listing the significant materials relevant to the particular industry. To measure consumption, it may also be desirable to obtain the quantity and value of individually important stocks of those materials that tend to fluctuate widely.

Containers and packaging materials (item 6.10.2)

157. This item includes purchased ready-made containers and packaging material and raw materials for their manufacture by the establishment. Containers regarded as fixed assets should not be included here.

Fuels and electricity (item 6.10.3)

158. This item includes the cost of all purchased fuels and electricity received by the establishment. However, fuels that enter the product or are used for other energy production should be included under materials (item 6.10.1). For convenience, gasoline and other fuels for vehicles are included, although some countries are using measures that more accurately reflect fuel consumption in the production process, and they have set up a separate category for motor-vehicle running expenses, which includes fuels for vehicles. Fuels and electricity used for heating and lighting are also included, except when used for employee-occupied dwellings owned or operated by the establishment. (The latter should be recorded separately in order to measure this portion of the cost of workers' housing borne by employers, which, in turn, represents payments in kind under compensation of employees.)

159. In order to calculate energy consumption, it is necessary to collect the quantity of the individually important fuels purchased and the quantity of electricity purchased, generated and sold. To ensure a complete coverage of item 6.10.3, the cost of the individual items should be included.

Quantity and cost of individual fuels purchased (item 6.10.3 (i))

160. The selection of individual fuel types will be determined by national usage. The following is a suggested list of principal fuel types: (a) coal, (b) coke (including breeze), (c) fuel oil, (d) natural gas, (e) liquified petroleum gases (propane, butane, etc.), (f) gasoline and (g) other fuels (steam, wood, etc.). Fuel oil may be divided into distillate (including light diesel) and residual (including heavy diesel) types. Individual countries may wish to separate one or more of the fuel types grouped in "other fuels". Both quantity and cost should be obtained for each fuel listed separately, except for "other fuels", where there is no homogeneous physical measure and only the cost should be obtained. The collection of fuel data in standard physical units permits the estimation of total energy consumption by the statistical organization conducting the census or annual inquiry. The guidelines on the valuation of inputs (see para. 155 above) apply here also. Excluded are (a) fuels produced and consumed in the same establishment; and (b) fuels purchased as raw materials to enter into the product and fuels consumed in the generation of electricity.

Quantity and cost of electricity purchased (item 6.10.3 (ii))

161. This item is defined as the quantity (in kilowatt-hours) and cost of all electricity purchased by the establishment during the year.

Quantity of electricity generated (item 6.10.3 (iii))

162. This item is defined as the total quantity (in kilowatt-hours) of electricity generated in the establishment (gross less generating-station use) during the year, including any part of the energy sold or transferred.

Quantity of electricity sold (item 6.10.3 (iv))

163. This item is defined as the quantity (in kilowatt-hours) of electricity sold to other enterprises or transferred to other establishments of the same enterprise.

Total energy consumed (item 6.10.3 (v))

164. This item is derived by adding the total energy equivalent of fuels consumed to the total consumption of electricity, both expressed in terajoules. The terajoule is the standard of measurement recommended by the United Nations Expert Group on the Classification and Measurement of Energy Statistics. The joule is a unit of work or energy equivalent to the amount of work done or heat generated by a current of one ampere acting for one second against a resistance of one ohm. (There are 3.6 million joules in one kilowatt-hour.) The calculation of total energy consumption is an important feature of any inquiry.

165. The data for individual fuels, collected in standard physical units, are converted into terajoules by the statistical office compiling the data. Where it is known that stocks of fuels tend to fluctuate widely, it may be desirable to request quantities of the individual fuels in stock at the beginning and end of the

reference period. This will enable the compilers of the data to estimate fuel consumption more accurately than would be possible using estimates based on purchases. Quantities of fuels consumed by the establishment out of its own production should also be collected and included where this consumption is important.

166. The quantity of electricity consumed is equal to the quantities purchased and generated, less the quantity sold. However, for the electricity industry (ISIC 4101), consumption is defined as the quantity of electricity used by the producers, transmitters and distributors of electricity in their establishments, but excluding the electricity used for auxiliary services, pumping and network losses.

Materials for own-account fixed assets and repair work (item 6.10.4)

167. This item includes raw materials and other materials purchased or received by the establishment for the production by the unit itself of capital goods for its own use (or for rental or lease) and materials and parts used for own-account repair and maintenance work on its own buildings, structures, machinery and other fixed assets. Included are materials and the like for the construction of employee-occupied dwellings and other staff facilities and for the repair and maintenance of all establishment-owned or rented buildings, except housing accommodation. (For housing accommodation, it might be useful to attempt to ascertain the repair and maintenance cost involved, which should be attributed to the cost of workers' housing under payments in kind, along with imputations to cover the cost of labour, overhead and so on.)

Purchases or receipts of materials and supplies from other enterprises (item 6.11)

168. This item includes the categories of materials and supplies enumerated under item 6.1 purchased or received from other enterprises.

Value of materials and supplies received from other establishments of the same enterprise (item 6.12)

169. This item covers raw materials, supplies and the like, purchased, or intermediate products manufactured, by one establishment of an enterprise and transferred to another establishment of the same enterprise, which further manufactures them, incorporates them into other products or employs them otherwise in its own production process. The categories are those defined under item 6.1.

Purchases or receipts of goods to be shipped in the same condition as received (item 6.2)

170. This item covers goods purchased from other enterprises (item 6.21) or produced or purchased by other establishments of the same enterprise and transferred to the reporting establishment (item 6.22), which are to be resold without processing or transformation. Goods to be divided and repackaged, bottled or canned should be included. The goods should be valued in the same manner as materials and supplies (see para. 155 above).

Cost of industrial services received, including services from other establishments of the same enterprise (item 6.3)

171. This item covers payments made by the establishment for contract, commission, repair and maintenance work carried out during the inquiry period by other enterprises (item 6.31) and by other establishments of the same enterprise (item 6.32). Where the work is carried out by other enterprises, the actual invoice prices should be used, but, where applicable, the deductible value-added tax should be excluded. Freight charges should be included. Where the services are carried out by other establishments of the same enterprise, commercial values should be used or an imputed valuation of the work should be made, including an imputed margin for overhead costs and profits, as well as the cost of materials consumed and labour used. The same values should be used for both the contributing and receiving establishments, when both submit returns. The categories to be covered are further defined below.

Contract and commission work (item 6.30.1)

172. This item covers work done by others on materials owned by the establishment, which generally entails the transformation or processing of raw materials; specialized work performed on products made by the establishment is included. Also included are payments made through subcontractors to homeworkers not on the pay-roll. Sales commissions should not be included (see para. 177 below).

Repair and maintenance work (item 6.30.2)

173. This item covers current repair and maintenance work on buildings and other fixed assets of the establishment and in respect of rented buildings other than housing accommodation. Payments for the installation of goods sold by the establishment on an installed basis and service on goods sold are included, but amounts paid for the installation and major repairs of capital goods are excluded. The repair and maintenance of motor vehicles is included, although some countries treat this item under a special category "motor-vehicle running expenses" (see para. 158 above).

174. The repair and maintenance costs of employee-occupied dwellings should not be included but should be recorded separately in order to calculate the total cost of workers' housing borne by employers for payments in kind.

Amounts paid for the outward transport by outside organizations of goods owned by the statistical unit (item 6.4)

175. This item is included to cover charges incurred by the establishment where the outward transport is provided by the establishment through an outside organization.

Other costs (item 6.9)

176. This item covers payments made by the statistical unit during the reference period for other operating costs and for services of a non-industrial nature. As defined in paragraph 150 above relating to "other revenue" (item 5.9), the item is intended for use in an extension of the industrial statistics programme where the enterprise is used for the collection of financial data. The actual payments made should be reported, less any deductible value-added tax. Only item 6.91 (expenses for renting capital goods and non-residential buildings) need be collected

separately, but other items which may be included are as follows: (a) service charges in respect of casualty insurance, 16/ (b) bank charges other than interest, 17/ (c) labour costs not included in compensation of employees, 18/ (d) purchases of provisions and supplies for sale in employee facilities, (e) amounts paid for storage or warehousing and (f) other operating costs.

177. The category "other operating costs" includes the following types of costs: (a) advertising, legal, accountancy, consulting, planning, research and development services; (b) patent and licence fees (but not the value of outright purchases of patents and licences); (c) printing costs, newspaper and periodical subscriptions; (d) postal, telephone and telegraph charges; (e) costs of representation, entertainment, travelling and subsistence; (f) costs of meetings of the governing bodies and shareholders; (g) commissions paid to persons not on the staff of the statistical unit; (h) contributions to business and professional associations; (i) motor-vehicle running expenses, not otherwise accounted for; (j) cleaning costs and disposal of waste; and (k) indirect outlays for purposes of financing the acquisition of fixed assets - for example, flotation costs in respect of security issues such as underwriters' commissions and registration charges, service charges in respect of loans, and expenses of special advertising campaigns.

178. The following items should be excluded: dividends and interest paid; fines and the like paid; outright purchases of patents and licences; purchases of land and other capital goods; donations; bad debts; depreciation.

Item 7. Value of stocks

179. This item comprises the value of all stocks owned by the parent enterprise and held by, or under the control of, the establishment, either at the establishment or elsewhere. Stocks held at ancillary units, in bonded stores or public warehouses, on consignment, in transit and materials being manufactured, processed or assembled on commission by others should be included. Materials owned by others but held by the establishment for processing should be excluded. Stocks held overseas should be excluded as, for purposes of the national accounts, it is appropriate to impute a change of ownership when goods are sent or received from abroad for sale or processing. This means that they should be regarded as sales or purchases even though legal title has not yet passed.

180. For certain inquiries, data might be collected on the quantity and value of the stocks of individually important products and materials. This information would be particularly useful in those cases where the stocks of such goods are known to fluctuate widely (see paras. 141 and 156 above).

181. The information on stocks is principally required to measure the value of changes in stocks which, ideally, should be valued at the purchasers' or producers' prices which are current at the time the changes are made. In general, stocks acquired from others should be valued at purchasers' prices and those processed internally at producers' prices. In order to assess the value of changes during the inquiry period, the level of stocks at the beginning and end of the period should be ascertained. As an approximation of the overall value of changes during the period, the levels at both the beginning and end of the period could be valued at the appropriate average prices ruling over the period. If this approach were considered feasible, the value of changes during the period would be included as a collection item and the value of stocks at the beginning and end of the period

would be less significant. In practice, however, it will usually be necessary to accept the current prices or the book values at the two points of time. Further details of current valuation are discussed by category of stock in the following paragraphs.

Stocks of materials, fuels and supplies (item 7.1)

182. This item comprises all materials, components and the like that enter into the product, fuels, and repair, maintenance, office and other consumable supplies. The value of any stocks of materials and supplies for use in own-account fixed asset work should be included. Whenever possible, it is desirable to show the value of stocks of fuels separately.

183. In principle, the stocks should be valued at replacement cost, based on purchasers' prices. The prices should include any duties and taxes payable by the purchaser, except value-added tax, and should be net of any rebates and discounts given by the seller. Alternatively, the book values might be requested.

Work in progress (item 7.2)

184. This item refers to the value of all materials that have been partially processed by the establishment but that are not usually sold, shipped or turned over to other establishments without further processing. Generally, it should include all work in progress for the account of others, irrespective of the arrangements for financing the work. However, that part of the work in progress on long-term contracts for which progress payments have been included under shipments should be excluded. Work in progress on own-account production of machinery and equipment should be included, but partially completed construction work should be excluded. The latter should be treated as part of fixed capital formation.

185. If possible, an imputed valuation in terms of producers' prices should be adopted, including an imputed margin for overhead costs and profits, as well as the cost of materials consumed and labour used. Alternatively, the book values might be requested.

Stocks of finished goods (item 7.3)

186. This item should include all goods made by the establishment that are ready for shipment as of the reference date. Finished goods held by another establishment that were processed by that establishment from materials owned by the respondent establishment should also be included. Finished goods held by the respondent establishment that were made from materials owned by others should be excluded.

Stocks of finished goods manufactured by the unit (item 7.3.1)

187. This item should include all goods made by the establishment that are ready for shipment at the reference date. Finished goods held by another establishment that were processed by that establishment from raw materials controlled by the respondent establishment should be included. Finished goods held elsewhere - at ancillary units, in bonded or public warehouses, on consignment, in transit, and so on, should also be included. Finished goods held by the respondent establishment that were made from materials owned by others should be excluded.

188. In principle, valuation should be in terms of the producers' prices at which similar goods have been shipped. The values should be net of any rebates or discounts but should include all duties and taxes imposed on the products, with the exception of the value-added tax. Alternatively, the book values might be requested.

Stocks of finished goods to be shipped in the same condition as received
(item 7.3.2)

189. This item covers the value of any stocks of goods that the establishment has bought with the intention of reselling in the same form, that is, without further processing or manufacturing. Although the goods have not been processed internally, they should be valued in the same manner as the finished products manufactured by the establishment, that is, in producers' prices. The book values may also be used. Stocks of goods to be resold without processing or transformation and not expressly purchased for that purpose may also be included.

Item 8. Indirect taxes and subsidies

190. Indirect taxes and subsidies should be reported separately; indirect taxes should be reported according to the categories described below. Customs and import duties included in the cost of intermediate consumption are not dealt with under item 8.

191. Indirect taxes are defined to include all taxes incidental to the production or sale of goods and services by the reporting unit and chargeable as expenses of production. These taxes are distinguishable in two broad categories - those invoiced by the reporting unit to its customers (commodity taxes) and those paid or to be paid by the reporting unit (non-commodity taxes). For countries using the value-added tax system, special provisions are included to accommodate that item.

Indirect commodity taxes (item 8.1)

192. The net value-added tax (item 8.11) is calculated as the difference between the value-added tax invoiced by the reporting unit to its clients and the deductible value-added tax on purchases of raw and ancillary materials, intermediate products and the like. The deductible value-added tax on purchases of fixed capital goods is not included here. Value-added tax may be difficult to collect for each of the different establishments of a multi-establishment enterprise.

193. Indirect commodity taxes cover turnover, export and sales taxes (item 8.12 (i)) and consumption, excise and luxury taxes (item 8.12 (ii)).

Indirect non-commodity taxes (item 8.2)

194. This item covers all other indirect taxes related to production and paid, or to be paid, by the reporting unit, such as:

(a) Motor road vehicle taxes and similar taxes on other transport vehicles considered as fixed capital goods;

(b) Stamp duties and registration fees, and business licences;

(c) Taxes on land and buildings, except when the taxes constitute merely an administrative device for assessing and collecting the total income tax, in which case, taxes on land and buildings are treated as current taxes on income or wealth;

(d) Taxes on total wages and salaries paid;

(e) Operating duties;

(f) Local taxes;

(g) Taxes on insurance;

(h) Official fees and charges - that is, duties payable for specific public services, such as the testing of standards of weights and measures, provision of extracts from official registers of crime and the like; also fees in respect of driving tests and licences, passports and airport duties;

(i) Entertainment duties;

(j) Levies on the use of fixed assets.

195. It may not be possible to collect information on non-commodity taxes at the establishment level. In such cases, the published results should indicate the kind of indirect taxes that have been reported.

Subsidies (item 8.3)

196. This item covers subsidies that are related to current production and that are paid on a continuing basis by State authorities or, in the case of members of the European Communities (EC), by EC institutions to resident units producing goods and market services, the purpose of the subsidies being to influence the selling prices of such goods and services and/or to allow adequate remuneration of the factors of production.

197. This item also covers export and import subsidies and assistance in the form of interest subsidies, even when the purpose of the latter is to facilitate investment transactions.

Item 9. Census and gross output

198. This measure is calculated from the items of data collected, and the results will vary depending on the extent of the collection. Where the cut-off point is defined as the industrial sector, that is, excluding activities of a non-industrial nature, the term "census output" should be used to indicate the extent of the inquiry. "Gross output" is used to indicate that non-industrial activities have been taken into account.

Census or gross output in producers' prices (item 9.1)

199. Where output has been obtained in the valuation recommended, the results in producers' prices can be calculated directly. For countries that traditionally collect output data net of indirect taxes and inclusive of subsidies, adjustments have to be made.

Census output in producers' prices (item 9.11)

200. If the full range of indicators recommended for the industrial statistics programme has been gathered, census output in producers' prices is calculated as follows:

<u>Code</u>	<u>Item</u>
5.1	Value of shipments of goods produced
+	
5.2	Value of goods shipped in the same condition as received
-	
6.2	Purchases or receipts of goods to be shipped in the same condition as received
-	
6.4	Amounts paid for the outward transport by outside organizations of goods owned by the statistical unit
+	
5.3	Receipts for industrial work done or industrial services rendered to others
+	
5.4	Value of own-account fixed assets
+	
7.23	Change in work in progress
+	
7.3.1 (iii)	Change in stocks of finished goods manufactured by the unit
+	
7.3.2 (iii)	Change in stocks of goods to be shipped in the same condition as received
+	
8.11	Net value-added tax (where applicable)

Where data are collected on a production basis, item 7.3.1 (iii) will be omitted.

201. If inquiries have not covered the full range of indicators, output should be calculated on the basis of the information available. Omissions should be indicated in the published results of the inquiry.

Gross output in producers' prices (item 9.12)

202. This item is equivalent to census output in producers' prices plus item 5.9, "Other revenue".

Census or gross output in approximate factor values (item 9.2)

203. The valuation "approximate factor values" excludes indirect taxes and includes subsidies.

Census output in approximate factor values (item 9.21)

204. This item is calculated as follows:

<u>Code</u>	<u>Item</u>
9.11	Census output in producers' prices
-	
(8.1 + 8.2)	Indirect taxes <u>19/</u>
+	
8.3	Subsidies

Gross output in approximate factor values (item 9.22)

205. This item is calculated in the same manner as census output (see para. 204), but gross output in producers' prices (item 9.12) is used.

Item 10. Census input and intermediate consumption

206. These measures are calculated from the items of data collected and are termed "census input" for a range of indicators limited to the industrial statistics programme and "intermediate consumption" for the full range.

Census input (item 10.1)

207. If all the recommended items have been gathered, census input is calculated as follows:

<u>Code</u>	<u>Item</u>
6.1	Purchases or receipts of materials and supplies for production
+	
6.3	Cost of industrial services received
-	
7.13	Changes in stocks of materials, fuels and supplies

Where input is measured on a consumed basis, the stock adjustment is not necessary.

208. Any omissions of the recommended items should be indicated in the published results.

Intermediate consumption (item 10.2)

209. This item is calculated in the same manner as census input (see para. 207), with the addition of item 6.9, "other costs".

Item 11. Census value added and total value added

210. Value added is the difference between census or gross output (item 9) and census input or intermediate consumption (item 10). The term "census value added" is used to indicate that the scope of the inquiry is limited to the content of the industrial statistics programme, as defined, and that receipts and purchases of a non-industrial nature have not been considered. Total value added is used to indicate that the full range of indicators has been covered.

211. Census value added, as defined here, is not net relative to the economy as a whole, but may be considered as net relative to the agricultural and industrial sectors of the economy. This is the measure that the majority of countries in the process of developing industrial statistics will presumably attempt to attain, whether for the full range of indicators set out or a more limited range within their capacity.

212. Even though the concept of total value added may have been adopted, in some circumstances, census value added may be a more appropriate measure for international comparability.

Census or total value added in producers' prices (item 11.1)

213. Census value added in producers' prices (item 11.11) represents the difference between census output in producers' prices (item 9.11) and census input (item 10.1). Correspondingly, total value added in producers' prices (item 11.12) is the difference between gross output at this valuation (item 9.12) and intermediate consumption (item 10.2). When calculated in this manner, total value added will be equal to the contributions of the individual branches of industry to the gross domestic product.

Census or total value added in approximate factor values (item 11.2)

214. This item, which is coded 11.21 for census value added and 11.22 for total, is equivalent to census or gross output in approximate factor values (item 9.2), less census input and intermediate consumption (item 10). It is also equivalent to census or total value added in producers' prices (item 11.1), less indirect taxes (item 8.1 + item 8.2), plus subsidies (item 8.3). 20/

215. This measure is not highly endorsed since the "producers' prices" concept has been adopted in the national accounts recommendations. However, it is included as an interim measure to accommodate those countries that have instituted this concept in their industrial inquiries, based on alternative concepts defined in the 1968 recommendations.

Item 12. Consumption of fixed capital

216. This item is included in order to calculate various SNA concepts, for example, the concept of national income excludes consumption of fixed capital; "domestic factor income" can be calculated by deducting consumption of fixed capital from gross domestic product at factor cost; and net fixed capital formation is equivalent to gross fixed capital formation less consumption of fixed capital.

217. Consumption of fixed capital may be defined in general terms as that part of the gross product that is required to replace fixed capital used up in the process of production during the reference period. It is based on the concept of the expected economic lifetime of the individual assets, and it is designed to cover the loss in value owing to foreseen obsolescence and the normal amount of accidental damage that is not reparable, as well as normal wear and tear. Unforeseen obsolescence is treated as a capital loss at the time at which it actually occurs, rather than as fixed capital consumption. In principle, the scope of the capital equipment for which consumption should be recorded is given by the definition of fixed capital formation (see para. 219 below).

218. In a stationary economy, in which the quantity and quality of fixed assets in use do not change, consumption of fixed capital can readily be defined so that in each year it is equal to the replacement needed. The problem of definition is more complicated in an economy characterized by changes in demand or by technical changes leading to obsolescence and no general rule can be formulated for such situations. It seems reasonable, however, to value consumption of fixed capital on a straight-line basis with reference to the expected economic lifetime of the individual assets. The estimate should take account of the average (normally expected) amount of accidental damage that will not be made good by repair or replacement of parts - for example, damage caused by fire or flood. This amount might be valued by reference to the net premium, that is, the premium reduced by the service charges, per unit value of fixed assets, of the appropriate type of casualty insurance.

Item 13. Gross fixed capital formation

219. Gross fixed capital formation is defined here as the outlays of industries on additions to their fixed assets, reduced by their sales of similar second-hand and scrapped goods. This definition differs from that in SNA. The data should include the value of all durable goods expected to have a productive life of more than one year and intended for use by the establishment (land, mineral deposits, timber tracts and the like, buildings, machinery, equipment and vehicles). Included are major additions, alterations and improvements to existing fixed assets that extend their normal economic life or raise their productivity. Also included is the value of new fixed assets and additions and improvements to existing fixed assets made by the establishment's own labour for its own use. While capital repair is included, expenditures for current repair and maintenance are excluded. Transactions in respect of financial claims and intangible assets (such as rights to mineral deposits, patents, copyrights and the like) are excluded.

220. As it is usually expedient to collect data separately for acquisitions and sales, these transactions are treated individually (items 13.1 and 13.2). The classification by type of fixed asset for which data are to be reported is set out in paragraph 228 below.

Valuation

221. Fixed assets acquired from others should be valued at purchasers' prices, which should cover all costs directly connected with the acquisition and installation of the items for use. These values comprise the cost of purchase of the fixed assets on the market, customs duties, purchase and other indirect taxes and fees paid to government, transport, delivery and installation charges, direct preliminary outlays such as for site clearance and the fees of architects, designers and engineers, and all legal costs. Indirect outlays for purposes of financing the acquisition of the fixed assets, for example, flotation costs in respect of security issues such as underwriters' commissions and registration charges, service charges in respect of loans, and expenses of special advertising campaigns are excluded. Such expenses are treated as intermediate consumption. For countries using the value-added tax system, the deductible value-added tax should be excluded.

222. In principle, fixed assets produced on own account should also be valued in this manner. However, as this may be impracticable, particularly in the case of the construction of structures and other works and alterations, it may frequently

be necessary to resort to valuing such own-account production at explicit cost, including any imputations that may be required in respect of the employed own-account labour.

223. Fixed assets produced by one establishment of a multi-establishment enterprise for the use of another establishment of the same enterprise should be valued by the receiving establishment as though purchased from outside the enterprise.

224. Sales of fixed assets should be valued at the actual amounts realized rather than at book values. It should be noted that only sales should be deducted, and not decreases in stocks of fixed assets owing to other causes. Decreases through obsolescence, fire, loss and the like are not considered here but are treated either as consumption of fixed capital or as a capital loss, depending on whether foreseen or unforeseen.

Time at which expenditure takes place

225. The acquisition of fixed assets should, in principle, be recorded at the moment the establishment takes legal possession of the items in question. When machinery and equipment are bought in completed form, the purchasers usually acquire the legal title to the items when they contract for delivery of the goods in question. In the case of hire-purchase arrangements, it is desirable to consider the time of possession as the moment at which the buyer acquires ownership even though legal title passes at a much later date. When machinery and equipment are produced on order, the buyers are considered to take ownership of the goods at the time the items are completed. Progress payments made in respect of the orders should be treated as trade advances and not recorded as capital expenditure, although such payments may be entered in capital accounts. However, in the case of the construction on order of buildings, roads, dams and other works, the buyers are considered to take possession of any work that has been put in place on the project. Therefore, the expenditure to be reported in the case of construction work should be calculated as the total value of the work completed during the inquiry period, less the amount of any progress payments made against the work prior to the inquiry period, plus all progress payments made during the inquiry period against work not yet finished by the end of the period.

226. The definition outlined in paragraph 225 above treats progress payments for construction work and for other fixed assets differently. For construction work, progress payments should be included in expenditure on fixed assets; for other fixed assets, progress payments should be excluded from expenditure on fixed assets and recorded as a financial claim. In some countries, this treatment may not be feasible and all progress payments may have to be recorded as expenditure on fixed assets.

227. When establishments make fixed assets on their own account, the value of the work put in place during the period should be classed as the gross fixed capital formation of the period.

Classification by type of fixed asset

228. The transactions in fixed assets are divided into the following categories:

(a) Land and land improvements. This category will normally relate to the value of unbuilt land since it will generally be impossible to separate the value

of built land from the value of the constructions built upon it and purchased at the same time. The latter will be included in category (b) below. Unbuilt land relates to land in its natural state, including waterways, lakes, underground resources, timber tracts and the like, or simply parcelled out (levelled, endowed with roadways, canals). Also included are outlays on all land reclamation and land clearance, irrespective of whether it represents an addition to total land availability or not; irrigation and flood-control projects and dams and dikes that are part of these projects; clearance and afforestation to timber tracts and forests; and the transfer costs of transactions in land, farms, mineral deposits and concessions, timber tracts and forests, fishing grounds and concessions and similar natural resources. It may be useful to distinguish the value of land before improvement from the other outlays and transfer costs.

(b) Building and other construction work. This category includes residential buildings and other buildings, such as factories, warehouses, office buildings, stores and restaurants; new construction, such as permanent ways of railways or roads, streets, car-parking facilities and the like, as well as major alterations and improvements.

(c) Transport equipment. This category includes motor vehicles, aircraft, ships, railway and tramway rolling stock, tractors for road haulage, carts and wagons, as well as major alterations and improvements of existing transport equipment.

(d) Machinery and other equipment. This category includes power-generating machinery; office machinery, equipment, furniture and furnishings; art objects; metal-working machinery; mining, construction and other industrial machinery; cranes, fork-lift equipment and the like; durable containers; equipment and instruments used by professionals; and any other machinery and equipment as well as major renovations and alterations to these types of machinery and equipment. Items of small value, such as hand tools, office desk equipment and furnishings, may be excluded on practical grounds if the customary accounting procedure is to treat them as a current expense.

Optional characteristics

229. For simplicity, the only item accorded priority 1 under item 13 is the total during the period by type of asset. However, other characteristics may be of considerable interest at the national level, probably the most significant being the distinction between new and used fixed assets. The standard adopted for this distinction is given below.

230. New fixed assets include all those that have not been previously used in the country. Thus, newly imported fixed assets are considered new whether or not they were used before they were imported. Used fixed assets include all those that have been previously used within the country.

231. The distinction between new and used fixed assets was included in the 1968 recommendations and, for continuity, is also included in the present recommendations. It is classified as an optional item because it is considered to be primarily of national interest, although in some countries only new assets are recorded and used as an approximate measure of total gross fixed capital formation. At the establishment level, the distinction between new and used fixed assets may not be easily determined, and sometimes the recommended distinction is

subject to different interpretations by national authorities. Caution, therefore, should be exercised when incorporating this characteristic into the inquiry.

232. Some countries are collecting expenditure on fixed assets under the categories "productive" and "social" investments. Social investments are defined as the costs of installations of a social character, that is, installations that are used by the staff or of benefit to the staff outside of working hours and that do not constitute any additional production capacity (canteens, sports arenas, rest rooms, dwellings for employees and so on). Where this information is desired, it could be fitted into the overall scheme as a subcategory of paragraph 228 (b) above.

233. It may be of interest to measure the portion of fixed capital formation that is attributable to statutory regulations concerning protection of the environment, such as expenditures for pollution control or noise abatement. This is a relatively new development and guidelines have not yet been formulated. However, national statistical offices may wish to study the national regulations and the practices of industry with a view to establishing guidelines on how to measure the expenditures relating to the protection of the environment.

Treatment of new establishments not yet in operation

234. Gross fixed capital formation should normally be extended to cover establishments where production had not yet commenced during the inquiry period. As this may sometimes be impractical, the treatment of such establishments should be covered in the published results of the inquiry.

Item 14. Capacity of installed power equipment

235. When this item is sought, a measure of the total capacity of installed power equipment, both in use and in reserve, should be requested for a given date of the inquiry period. There are two ways of calculating the capacity of power equipment: (a) the sum of the "capacity of all prime movers not driving electric generators" (item 14.11) and the "capacity of all electric motors" (item 14.2) and (b) the sum of the "capacity of all prime movers" (item 14.1) and the "capacity of electric motors driven by purchased electricity" (item 14.21). These two methods give similar but not identical results.

236. In practice, obtaining total installed capacity by the second method - that is, summing "capacity of all prime movers" and "capacity of electric motors driven by purchased electricity" - has some disadvantages. The difficulty is not only that electric motors may be run by purchased electricity at some times and by self-generated current at others, but also that, in some cases, it may be difficult to distinguish the source of the electricity used. The first method of calculation is therefore preferred.

Prime movers (item 14.1)

237. All prime movers, mobile or stationary, that are installed as of the reference date should be covered, except those used to drive vehicles: internal combustion engines, steam engines, water wheels, turbines and so on. Capacity should be measured in the rated horsepower indicated by the manufacturer.

238. For the calculation of total capacity, prime movers should be distinguished by (a) those driving electric generators and (b) those driving machinery other than electric generators. The distinction should be based on the situation at the reference date.

Electric motors (item 14.2)

239. All motors installed as of the reference date and used in connection with the production activities of the establishment should be covered, including motors used for driving machine tools and other equipment used in fabricating, assembling or conveying, even though the motor is built into the machine, and motors driving exhaust fans or air-conditioning equipment in the works proper. Motors driving desk fans, non-industrial refrigerating equipment, office air-conditioners and the like are excluded. Capacity should be measured in the rated horsepower indicated by the manufacturer. In practice, it may be advisable to limit reporting of electric motors to those above a specified capacity - for example, to those of more than one horsepower.

240. For the calculation of total capacity by the second method (see para. 235 above), electric motors should be distinguished by (a) those driven by purchased electricity and (b) those driven by self-produced electricity. The distinction should be based on the situation at the reference date.

Generators (item 14.3)

241. This item refers to the capacity of all generators installed, in use and in reserve, as of the reference date. Capacity should be measured in kilowatts or kilovolt amperes, as rated by the manufacturer.

Item 15. Orders

242. In selected branches of industry, information on orders might be collected in the more-frequent-than-annual inquiries.

Net new orders received (item 15.1)

243. This item is defined as the current value of all new orders received in the inquiry period, less cancellations during the period.

Unfilled orders at the end of the inquiry period (item 15.2)

244. This item is defined as the current value of all orders outstanding at the end of the inquiry period.

245. The value of unfilled orders at the beginning of the period plus the value of "net new orders received" in the period, minus sales or shipments in the period, equals the value of unfilled orders at the end of the period.

Notes

1/ Official Records of the Economic and Social Council, 1983, Supplement No. 2 (E/1983/12), para. 42.

- 2/ International Recommendations for Industrial Statistics, Statistical Papers, Series M, No. 48 (United Nations publication, Sales No. E.68.XVII.10).
- 3/ Acknowledgement is gratefully made to the International Labour Organisation and EUROSTAT for the material that they have made available and that has been incorporated or heavily drawn upon in developing the present recommendations.
- 4/ International Recommendations for Industrial Statistics ...
- 5/ International Standard Industrial Classification of All Economic Activities, Statistical Papers, Series M, No. 4, Rev. 2 (United Nations publication, Sales No. E.68.XVII.8).
- 6/ A System of National Accounts, Studies in Methods, Series F, No. 2, Rev. 3 (United Nations publication, Sales No. E.69.XVII.3).
- 7/ Recommendations for the 1983 World Programme of Industrial Statistics, Part Two, Organization and Conduct of Industrial Censuses, Statistical Papers, Series M, No. 71 (Part II) (United Nations publication, Sales No. E.81.XVII.12).
- 8/ Guidelines on Principles of a System of Price and Quantity Statistics, Statistical Papers, Series M, No. 59 (United Nations publication, Sales No. E.77.XVII.9); and Manual of Producers' Price Indices for Industrial Goods, Statistical Papers, Series M, No. 66 (United Nations publication, Sales No. E.79.XVII.11).
- 9/ International Recommendations for Construction Statistics, Statistical Papers, Series M, No. 47 (United Nations publication, Sales No. E.68.XVII.11).
- 10/ In establishing a classification system for gathering production and consumption data, the following references may be useful: Recommendations for the 1973 World Programme of Industrial Statistics, Part II, List of Selected Products and Materials, Statistical Papers, Series M, No. 54 (Part II) (United Nations publication, Sales No. E.71.XVII.16); and "International Standard Classification of all Goods and Services (ICGS)" (E/CN.3/493).
- 11/ The problems of compiling and updating an industrial directory are discussed in chapter IV of Recommendations for the 1983 World Programme of Industrial Statistics, Part Two ...
- 12/ International Standard Industrial Classification of all Economic Activities ...
- 13/ Official Records of the Economic and Social Council, 1983, Supplement No. 2 (E/1983/12), para. 39.
- 14/ International Labour Organisation, Official Bulletin, vol. XLVI, No. 1 (January 1963), pp. 143-144.
- 15/ In addition to rents, cost of workers' housing should include fuel and electricity for heat and lighting, and repair and maintenance, whether carried out by the establishment's own labour or purchased. Any rents received from employee dwellings should be deducted.

16/ The service charge in respect of casualty insurance is defined as the difference between the premiums paid and the claims received during the period.

17/ The bank charges are mainly remittance and collection charges, commissions on overdrafts, commissions for discounting bills of exchange (excluding the amount of the actual discount), commissions for granting (opening) of credits, provision of bonds and endorsements (bill guarantees), charges relating to foreign exchange operations and foreign collections, charges for issuing letters of credit and traveller's cheques, charges for supply of business information, and the like.

18/ This item is discussed in paragraph 133 above. The types of costs covered in this category are employer's cost for vocational training; employer's cost for welfare services (cost of canteens and other food services; cost of educational, cultural, recreational and related facilities and services; grants to credit unions and cost of related services); employers' other labour costs (cost of transport of workers to and from work undertaken by the establishment but provided by outside organizations; cost of work clothes; other labour costs). In addition, taxes on wages and salaries are considered labour cost; these taxes are included in item 8.2 (see para. 194 above).

19/ Under the value-added tax system (as applied here), the calculation would be 8.11 (i) - 8.11 (ii) + 8.12 + 8.2.

20/ Under the value-added tax system as set out here, item 8.11 (i) should be adjusted in respect of item 8.11 (ii).

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