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**SESSION 1: RECONSTRUCTING THE PAST**

**HISTORY OF STATISTICS - PROBLEMS AND PROSPECTS OF INTERNATIONAL COOPERATION**

Report submitted by the Federal Statistical Office of Germany \*/

**INTRODUCTION**

1. Official statistics are mainly geared to future developments. Particularly at times of social, economic and political changes, the stock of data of official statistics constitutes one of the few reliable bases for taking decisions at the state and private levels. Present discussions centre around such issues as the fulfilment of an increasing demand for data, new technological developments and challenges, strategies and tendencies in the further development of international cooperation, and data dissemination in the multimedia age. However, a look back into the past is equally important to understand the present time as a product of a historical process, to realise the causes and development of current phenomena, to learn from solutions of the past for solving present problems and, last but not least, to duly appreciate the work of the past.

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2. Looking at the development of official statistics from the very beginning, it becomes obvious that they have always been affected by continuously changing interests and impacts resulting from the interaction of policy, state and society. 1/ Those effects, which in fact were considerable, concerned the contents, form and methodology of statistics as well as the

demands made by and on statistics. In respect of historical statistics, the logical consequence is that those data cannot be accepted without further consideration. They must rather be seen in the context of their origin, the conditions of their development and their utilisation. Apart from national influences, the increasing international cooperation between statisticians had an impact on data collection, processing and distribution in the course of the 19th century, too.

3. In the following, the history of international statistical cooperation will be outlined from the beginning of the modern era until today. Based on that historical perspective, important methodological and contents-related trends will be shown which have marked the work mainly of official statistics. Finally, some light will be shed on a future worldwide statistical integration.

Development of the production of statistical data from the beginning of the modern era up to the French Revolution

4. I would like to mention the early production of statistical data in ancient times and the middle ages in brief only. As far as ancient times are concerned, there are references in particular to population censuses conducted in Mesopotamia, Egypt and China as early as in the third millennium before Christ and later, for instance, in Palestine and Rome. In addition, some examples of land surveys, livestock censuses and even registers of citizens (for instance in Athens) <sup>2/</sup> were reported. The reasons for collecting statistical data were mainly of a tax or military nature.

4. Similar conditions possibly were the reasons for producing statistical data in the middle ages. Though guild lists, tax books and similar types of documents were available in many medieval towns, an analysis of their contents was - if at all - made in a summarised form only. Mainly two reasons are indicated for the "statistical abstinence" during the middle ages. One reason was the missing central power and the other and possibly more important reason was the dominance of religion or, in other words, the dominance of religious belief over reason. <sup>3/</sup>

5. At the beginning of the modern era, the situation just described had not yet changed fundamentally. However, the intellectual and cultural changes which were the result of discoveries, Reformation, Humanism and the implementation of the art of printing opened a new epoch after the end of religious wars around the middle of the 17th century. Statistics of today have their roots in that epoch which was characterised, on the one hand, by the establishment of an absolutist state as the dominating type of state with mercantilism being the corresponding type of economy and, on the other, by the intellectual period of the Enlightenment which soon penetrated into all cultural areas, namely literature, science, religion, justice, and also the absolutist state. It was certainly not an accident that statistics came on the scene and began to develop immediately in that period when the state required statistical information and - what was even more important - reason was considered the main factor of progress.

6. The absolutist state, where a single monarch possessed all the state power, interfered in and regulated all spheres of life to an extent never experienced before. The constitution, military service, coinage, administration, foreign trade etc. were organised in a way which served the state, that is the monarch, best. Factories were established to ensure the economic independence of the state and to facilitate further progress. Immigration rules served to adjust even the number of population to the requirements of the state.

7. Fulfilling all aforementioned tasks and functions required information about the population, economy, military service and other spheres of life. That necessity became even more urgent after the Thirty Years' War when fundamental conditions of life had been destroyed in many places. In addition, the need for and power of regulation produced a desire to ascertain the effects of the measures taken. Being convinced of the omnipotence of administrative interference, the absolutist state sought to have the success of its efforts documented. 4/

8. Characteristic feature of that type of data collection was that, over a long period of time, it was conducted in the individual states in very different ways for different purposes (among which financial and military ones were again dominating). The development of a unified and well-founded methodology was particularly hindered by the secrecy of almost all data. As a result, the normal process of learning could hardly take place, which otherwise would undoubtedly have improved the quality of data and facilitated their comparability. It certainly was the huge amount of data itself which finally resulted in a situation where only little material was analysed and exploited). 5/

#### Institutionalising statistics in statistical offices

9. The historical changes and events which took place in Europe and North America at the turn of the 18th century - namely the French Revolution, American Declaration of Independence, beginning of Liberalism, industrialisation and its consequences - opened a new chapter in the history of statistics. However, the differences between the tabulation system of the mercantilist and even still the Napoleonic ages, on the one hand, and data production of the newly founded statistical offices in the 19th century, on the other, are so considerable that a relation can hardly be established between the statistics of the two epochs. In fact, statistical offices as such were very rare in the old system. Existing offices compiled final results only, while external authorities were concerned with data collection and processing. The first central statistical agency of that early type was the **French Bureau de la Balance de Commerce** (1713) which was replaced by the **Bureau Officiel de la Statistique Générale** (1802 - 1812) in the first Empire. In the 18th century, that is exactly in 1756, the Swedish **Tabulation Commission** and in 1797, the Norwegian Tabulation Office 6/ were set up. In Germany, statistical offices developed only under the influence of the large-scale Napoleonic "enquêtes" which differed from mercantilist surveys by the principle of publicity though, otherwise, they equalled them with regard to

methodology and design. The first **Statistical Bureau** was set up in Prussia (1801), followed by a Bureau in Bavaria (1808) which was however dissolved in 1817 after its founder, a minister Montgelas, had been brought down. 7/

10. The beginnings of official statistics in the United States of America were different. They were closely linked with the constitutional structure. The parliamentary representation of the individual states depended on their population so that in 1790, a **Census Bureau** was set up to conduct a general population census. However, that Bureau was not a statistical office in the present sense as it was dissolved upon completion of the population census and revived each time a new census was to be conducted, that is at ten-year intervals.) 8/

11. After the Vienna Congress, the spirit of "still life", which replaced the high tension of the Napoleonic era, gained ground in official statistics, too. Though large amounts of material were collected, there was a lack of appropriate methodology and adequate use. Statistical information was almost never published. In places such as Prussia where publications had been issued, they were restricted once again. Even in the thirties of the 19th century when statistical production was considerably extended and the interest in statistical information increased in general, the situation hardly changed. After an interruption of several years, statistical offices were set up in Bavaria, France and Denmark (1833) and with the German Customs Association. They were followed by offices in Greece (1834) and England (1837). 9/

12. The first Head of the Belgian statistical office, Mr. Quetelet, was breathing new life into official statistics. The 1846 population census in Belgium, which was the result mainly of his doing, for the first time distinguished between data collection and data processing. That was a pioneering development which promoted the centralisation of processing procedures and simultaneously reduced the burden on external authorities.

13. After the 1848 Revolution, the way was paved for regular publication of statistical material which, until that time, had been a characteristic feature of the English Commercial Department only. At the same time, statistical research saw a profound intensification, mainly owing to the 1853 to 1878 International Statistical Congresses inspired by Quetelet.

14. As far as Germany as a whole was concerned, the events of 1870/71 resulted in changing the statistics of the Customs Association into statistics of the German Reich. In 1872, the **Imperial Statistical Office** was founded as a statistical institution. At that time, the federative nature of statistics was born, which has been a characteristic feature until today.

15. Due to the described quantitative and qualitative development of official statistics and the growing economic and social integration of individual countries, international statistical cooperation became an urgent necessity. Former "international statistical congresses" had not succeeded in fulfilling that requirement as they had put scientific comparability over the interest of the individual countries in data and sought a direct influence on

the statistical services of the countries concerned. That had not been a success and the international congresses failed finally.

16. Though the aforementioned international statistical work was commendable, it could not meet the continuously growing need for an appropriate international comparison of the economic, social, demographic and cultural developments and conditions in the individual countries as a result of the development of the states themselves and their ever closer relations which became increasingly diversified. The main reason for that incapability consisted in temporal and particularly methodological differences between official statistical surveys and diverging ways of processing and publishing the results which could serve as a basis for international statistical comparison. For this reason, international statistics hardly played a role, and not more than the beginnings of an international exchange were seen during the first decades of the existence of statistical offices.

#### **Development of international statistics from the end of the 19th century to the Second World War**

17. Until the turn of the century, the maintenance of international statistics was mainly in the hands of the International Statistical Institute (ISI) established in 1885. As specified in its statutes, the Institute is a research society whose task is to further the progress of official and scientific statistics. In this broad context, one of the main activities of the Institute is the harmonisation and unification of statistical results. The following individual tasks are laid down in the Constitution: initiating statistical surveys of economic and social issues with governments, developing adequate methods of data collection and processing, convening meetings on statistical problems, maintaining close relations between statisticians, and publishing international statistical tables and scientific documents. In terms of its contents, the Institute's sphere of work is not limited; it encompasses all statistical fields.

18. As regards its recommendations for harmonising country-related statistics with the aim to improve international comparability, the Institute is forced to rely on its scientific authority. It does not have any direct influence on the official statistics of the individual countries, it exerts not more than an indirect influence through its members who are, apart from representatives of research institutes and statistical societies, mainly representatives of official statistical bodies. 10/

19. At the turn of the century, the situation described above saw a change. Even before the First World War, the activities to promote international statistics differed to an ever greater extent. Institutes and organisations were established which, apart from their actual tasks, collected statistical material and considered it necessary to study statistical methods. That applied to the **International Labour Office** set up in Basel in 1901, whose main work, namely the international regulation of working conditions, often required preceding statistical surveys of the conditions concerned. The same was true for the **International Agricultural Institute** founded in Rome in

1905. Its work mainly focused on advancing national and international agricultural statistics. The **International Health Office** established in Paris two years later, that is in 1907, was primarily concerned with statistics of infectious diseases. 11/

20. In November 1913, a **Permanent Office** of the International Statistical Institute was finally set up with its headquarters in Den Haag in order to produce international statistics from the statistical material of the individual countries and to publish them at periodic intervals.

21. At the end of the First World War, the League of Nations was founded and seated in Geneva. The aim of that organisation was to promote international cooperation in almost all spheres of life of the member states. The League of Nations collected and published statistical data and, in that context, also harmonised economic and financial statistics. The so-called labour statistics lay within the competence of the founded as a suborganisation of the League of Nations. And health statistics were within the responsibility of the World Health Organisation.

22. A result of the effort made by the League of Nations was the 1928 International Convention on Economic Statistics. The Convention included the general obligation to compile and publish economic statistics in particular in the areas of foreign trade and industrial production. In addition, it dealt with such issues as employment, agriculture and forestry, fisheries, and the construction of price indices. To develop a precise methodology, the Convention set up a small **Committee of Statistical Experts** whose task was to work out recommendations for harmonising statistics. Since those recommendations were not binding, they were followed only rarely. 12/

23. Before the Second World War broke out, international cooperation in the field of statistics could be briefly characterised as follows: The League of Nations, **International Labour Office** and **International Agricultural Institute** published largely comparable international statistical tables at regular intervals. Duplication of work was avoided by the agreements concluded. Two committees of the League of Nations and the **International Labour Office** evaluated the statistical material collected and submitted recommendations for improvements.

24. The International Statistical Institute at that time reassumed its role as an international research society. In addition, it collected and published demographic data. Though the emphasis was on collecting European data, the cooperation of the United States became closer with every new year. Suitable statistics were still missing for large parts of the world (particularly Central and South America, Asia, and Africa). The countries of the British Empire were striving for a closer statistical cooperation, especially with regard to methodological issues. The same was true for the Scandinavian countries. Attempts to unify data bases were not yet very successful at that time as, on the one hand, national interests were still dominating and, on the other, the cooperation between countries and supranational organisations did not yet produce a sufficiently urgent political need for comparable statistics at the international level. During the Second World War, the above activities were interrupted to a large extent.

Development of supranational and international statistics since the 50s 13/

25. After the Second World War, international statistical cooperation expanded to an extent never experienced before, which can be outlined here in brief only. Since that time, international statistics have been characterised by the following two major cooperation and coordination systems:

- the statistical system of the United Nations (UN) which, in institutional terms, encompasses a statistical division in the General Secretariat (UNSTAT), statistical divisions in the five regional economic commissions and statistical offices in the numerous UN specialized agencies; its work has been aimed at achieving international comparability and advancing official statistics,
- the statistical system of the European Union (EU) which comprises the Statistical Office of the European Communities (Eurostat) and the statistical offices of the member states; its work has been aimed at largely harmonising and advancing official statistics at the Union level.

26. In addition, the Statistical Directorate of the Organisation for Economic Co-operation and Development (OECD) as a professional and research organisation, the International Statistical Institute (ISI) and the International Association for Research in Income and Wealth (IARIW) make a particular contribution to international statistical cooperation.

27. The former functions of the League of Nations were transferred to the United Nations. The **Committee of Statistical Experts** has continued to exist, however, the secretariat of the committee was changed into the **United Nations Statistical Office**. Besides, a standing Conference of European Statisticians was founded within the framework of the United Nations Economic Commission for Europe (ECE) in Geneva.

28. While the UN and the related specialized agencies became active in the statistical sphere shortly after the war when they began to work out the conceptual and methodological bases for an international comparison of economic and social developments in the member states the majority of which were still under reconstruction, supranational statistical cooperation at the European level was initiated at the end of the 50s only when European integration required harmonised statistical results.

29. When the European Coal and Steel Community and the European Economic Community (EEC) were founded in 1953 and 1958, respectively, the Statistical Office of the European Communities (Eurostat, presently seated in Luxembourg) came on the scene. While all other international organisations eventually were only in a position to make recommendations whose implementation was based on a kind of moral obligation rather than legal force, EU cooperation became much closer and in many cases had a legally binding effect.

30. The functions of the two main statistical systems are basically comparable. Both the UN statistical system and the statistical system of the Community collect statistical data in the respective member states which, in an adequately processed form, serve as an information basis for supranational and international economic, social and environmental decisions or recommendations. Seen from this angle, both statistical systems are service facilities serving the political and administrative UN and EU bodies. Their main function consequently is to satisfy their immediate clients' need for information.

31. The second set of tasks of the two systems is related to their service function: the development of conceptual frameworks, nomenclatures and methodological bases for the supranational and international comparability of statistics provided by the member states and the coordination of their application. The fulfilment of those tasks, which requires a lot of work, lies within the competence of bodies consisting of representatives of the member states at the heads of offices or experts level and representatives of the respective level of the UN or Eurostat statistical services.

32. By far the larger part of the UN statistical programme concerns the member states in their function as either data suppliers or participants in the numerous working bodies concerned with the development of the conceptual and methodological bases for comparison. In their function as data suppliers, the member states have an interest that the demand for data supplies made on them by international organisations in the context of the statistical programme does not exceed an acceptable extent from the perspective of the burden entailed. In the recent past, that requirement was particularly stressed during programme discussions in the UN Statistical Commission and, above all, in CES. As a result, the international organisations compared their questionnaires, which finally led to an elimination of duplicated questions in various areas and an exchange of data once collected between the organisations concerned. 14/

33. The objectives and functions of the EU statistical system are determined by the aims of integration worked out and specified in the framework of European treaties. In the beginning, the Community mainly focused on statistics of heavy industry and agriculture. On the initiative of the EC Commission, the Council of Ministers of the European Communities issued binding directives for harmonisation in those sectors with the aim of achieving comparability of the data to be supplied by the member states to the Community and to ensure that the results could be used as an adequate basis of information for political decisions regarding the Community. As can be seen, Community statistics were governed by communal legal regulations at an early stage of their existence.

34. The aforementioned principle gained in importance as European integration was intensified and the competences of the Community were expanded. While as a result of the 1957 Treaty on the European Economic Community a continuously increasing demand for information was observed in particular in the field of economic statistics, the 1987 Single European Act gave an impetus to further growth which opened up new fields of action such as regional statistics in the context of structural development programmes

aimed at strengthening economic and social unity, environmental statistics, and research and technology statistics.

35. The dynamic development reached its climax when the Maastricht Treaty was concluded. In that context, the Council adopted a multiannual programme for Community statistics in 1993 encompassing all fields of official statistics. In the course of time, a trend has been observed towards ever more detailed and comprehensive harmonisation and transmission regulations with the aim to meet the Community bodies' increasing demand for information and a maximum flexibility in evaluating and compiling statistical data.

36. The statistical programme of the Community constitutes the framework for coordinating statistical projects at the EU level. Since its binding force is of greater relevance than that of the UN statistical programme, it is subject to a compulsory planning and implementation procedure determined by Council decision 15/. The EC law-making initiatives have been generally characterised by a trend to support the harmonisation of Community statistics by far-reaching, detailed and direct stipulations and, in this context, to expand the coordinating, directing and controlling competencies of the Commission. Particularly in the recent past, this trend has met with the resistance of the statistical offices of the member states who have tried to obtain better opportunities for participation in planning and implementing the statistical programme of the Community and intended to restrict the EC Commission's demand for data to what is absolutely necessary. The member states have based their effort on the principles of subsidiarity and transparency of both reasons for decisions and decision-making procedures.

37. The great challenges made during the past four decades on international cooperation and its framework conditions, which have changed in particular during the last few years, made it necessary to develop and continuously adjust a complex set of coordination instruments. The basic components of that set of instruments have two functions: On the one hand, they constitute the conceptual and methodological basis for comparability of statistics at the supranational and international levels and, on the other, they provide the structural framework for coordination activities of supranational and international organisations.

38. The main instruments of coordination applied in the different systems are the following:

- the UN and EU statistical programmes,
- conceptual frameworks such as the System of National Accounts (SNA) and
- specific classifications such as the International Standard Industrial Classification of All Economic Activities (ISIC).

39. In addition, the importance of developing profession-related ethical principles for statistical work should be underlined as they reflect the objectives and role of official statistics in the modern information society.

In 1985, the Code of Ethics was adopted by the International Statistical Institute and, based on it, CES prepared and adopted the Fundamental Principles of Official Statistics in 1991. These have since been adopted by the ECE (1992) and by the UN Statistical Commission in 1994.

40. Since "official statisticians" have been working together in a large number of bodies and organisations, the problems of official statistics have been slightly pushed into the background by the International Statistical Institute. Here, the development of mathematical procedures for all statistical fields has dominated the statistical programme. 16/

International trends regarding the methodology and contents of official statistics

**Coordination and comparability**

41. Since the very beginning of their existence, a fundamental task of international statistics has been the harmonisation, unification, standardisation etc. of national statistics with the aim to make statistical results of different countries comparable. The principles of harmonisation have been provided by political bodies. The statistical developments in Germany after 1834 can serve as an example showing in what way statistics were harmonised, what stages of development had to be gone through and what difficulties were encountered. Customs and foreign trade statistics were harmonised first in the context of the statistics of the German Customs Association. They were followed by the census of households and persons as the charges to be paid to the Customs Association depended on the number of inhabitants. Five years after the foundation of the German Reich in 1870 the currency, after another ten years social insurance and again 20 years later civil law were harmonised, which had an impact on statistics, too. 17/

42. As a matter of fact, the first phase of producing internationally comparable statistics is aimed at coordinating programmes and selecting statistical variables required either by international organisations to carry out specific measures or for political decisions at an international level. 18/ During the second phase of harmonisation, definitions and classifications are adjusted and harmonised. The temporal dimension of harmonisation, that is synchronisation, serves to determine unified frequencies and reference dates. The next stage of statistical integration is characterised by collecting data in a specified material and regional breakdown on the basis of unified methods and procedures.

43. Coordinating the computation of indices and accounts has to be regarded as another step in harmonising international statistical results. Examples to be mentioned in this context are the effort made to harmonise price statistics in the European Union, in particular the consumer price indices 19/, and the new System of National Accounts (SNA) 20/ which was adopted by the Statistical Commission of the United Nations in 1993.

44. The last stage of developing a unified data base includes independent surveys of international organisations. Due to the cost and organisational effort involved, however, that last stage is usually not implemented.

#### Data collection

45. Modern statistical data production is characterised by the widespread use of sampling procedures. Up to the Second World War, exhaustive surveys dominated the collection of statistical data.<sup>21</sup> The progress made with regard to the sampling theory in the 20s and 30s of this century first convinced the official statistical bodies of the United States and India to make use of random sampling in data collection. The successful application of respective procedures resulted in a sharp increase in using samples for business and population surveys in the early 50s. In the years to follow, sampling procedures, the raising of data and assessing of data accuracy were advanced quickly.<sup>22</sup> Today, drawing scientifically substantiated and reliable samples is an indispensable precondition for fulfilling the considerably increased demand for data.

46. The process of actual data collection has changed as well. In the past few years, new technological possibilities have led to an increased application of computer-aided data collection procedures. Over decades, data collection was dominated by the traditional "paper and pencil" techniques apart from using enumerators and interviewers. Today, CASIC (computer-assisted survey information collection) stands for a number of activities aimed at an intensified automation of the data collection process, integration of statistical requirements into reporting systems of enterprises, enhanced access to statistical information from existing automated administrative documents and enlarged use of sophisticated communication services such as PC-aided telephone interviewing. <sup>23</sup>

#### Data processing

47. At the beginning of statistical work, no difference was made between data collection and processing. Only in the middle of the 19th century, separate survey documents were introduced for coding and for data entry. That approach was maintained for about one hundred years. In the past few decades, however, the processing of huge amounts of data has been considerably accelerated by introducing methods of electronic data processing. Various manual procedures such as coding or conducting plausibility checks which, at cyclic intervals, take place repeatedly during the stages of data entry, processing and manual correction, could be rationalised through the application of new interactive systems. Presently, the processing and production of statistics is again accelerated by a decentralised EDP use. <sup>24</sup>

#### From individual statistics towards a general overview

48. During the first decades of the existence of official statistics, basically "individual statistics" were compiled only, though sometimes they were of a rather complex nature. Different variables, for instance, of persons or enterprises were collected during surveys, afterwards combined and comparisons made with similar statistics of previous times.

49. In the early years, the emphasis of statistical work was mainly on developing and improving those individual statistics. Thus, for instance, foreign trade statistics concentrated on customs receipts only. They covered dutiable import goods, while commodity values were not registered and countries of origin and of destination were not distinguished. As a result of the requirements of economic policy and, in particular, trade agreement negotiations, the statistics were continuously supplemented, commodity groups covered completely and broken down in greater detail, and commodity values registered - at the beginning of some import goods, then of all export goods (in Germany in 1911) and finally of all import goods (1921). Bilateral commodity transactions were the basis for covering countries of origin and of consumption as precisely as possible 25/. The outlined development of individual statistics was accompanied by international harmonisation efforts aimed at describing foreign trade relations as a whole.

50. Apart from compiling individual statistics, the processing of results of different statistics was also started rather early - and again at the national level first. An example was the construction of life tables for which the age structure of the population based on the population census and mortality by sex and age had to be known. Monitoring the economic situation, which was introduced during the time of the Weimar Republic, led to a coordinated observation of different economic statistics in Germany. National income computations or comparisons of the tax burden are also based on processed statistics. Developing a "real economic balance" was begun before the Second World War. Other important examples of processing statistical results are the numerous index computations, volume computations in the area of foreign trade and the calculation of purchasing power parities, where manifold computation and estimation procedures are used.

51. However, a systematic summary of the results of most varied statistics was provided by the system of national accounts only, which was set up in all industrial countries in line with the instructions of international organisations (such as the OEEC and later the OECD). National accounts provide an integrated picture of the circular flow of goods and services and of income. The need to obtain a complete overview of the phenomena of public and social life is basically reflected by the work on a system of social indicators and the effort made to establish an integrated system of demographic data. 26/ Recently, Germany and many other EU member states have been working on a system of environmental-economic accounting.

52. In this context, the work carried out to develop databases for statistical purposes or general statistical information systems should be mentioned, too. They will make it possible to combine statistical results from different sources and to recognise and present in a better way situations, relations and dependencies in the sense of a "complete overview".

#### Dissemination of statistical information

53. While statistics were kept secret in the beginning, statistical data have been disseminated mainly in the form of tables since the middle of the 19th century. Since the 60s of this century, international organisations have set up databases comprising, above all, international data.

54. As part of the development of information technology, electronic communication media have been produced ensuring data availability independently of space and time. Electronic messages arrive at the recipient's desk almost at the same moment they are dispatched. Hard-disk storage capacities have increased enormously so that everybody can store huge amounts of data. This way, statistical information can be provided to any user in the world at the same time. 27/ As a result, the importance of disseminating statistical information via printed media will decrease.

55. Users of data will require information in a form corresponding with the opportunities of the multimedia age. In particular the demand for internationally comparable aggregated and individual data, whose selection and processing can be controlled via metadata information, will increase. For instance via Internet, users will in the future be connected to the database of a statistical office from which they can retrieve the anonymised data required and process them on their personal computers.

#### Final chapter: Worldwide integration of statistics

56. Implementing a European economic and monetary union will, among other things, entail a unification and harmonisation of statistics. However, the vision of a statistician must go beyond European borders. The worldwide trend towards globalising markets is exceeding the economic integration of individual markets such as the European, American or Asian ones. Environmental issues such as the damaged ozone layer, greenhouse effect and consequences of oil accidents have gained a cross-continental nature, too. Large-scale investment projects in the areas of research and development which are for instance related to the environment or energy issues have been increasingly funded and carried out by consortia of many countries. The development of computer and telecommunication technologies will continue to be rapid and bring closer to each other and finally connect large parts of the world. Statistics will contribute to that process as well.

57. In (the far) future, generally accepted and internationally applicable statistical norms and standards will certainly serve as a conceptual basis for comparing statistics which will in turn contribute to a closer worldwide cooperation between countries with different economic and social systems.

58. A reason for this optimism is not least the fact that the collapse of most of the systems in planned economies and the development of market structures in those countries have had a considerable effect on international statistics. The European transition countries have based the reconstruction of their statistical systems on the ECE/UN Fundamental Principles of Official Statistics, thus paving the way in those countries for objectivity and neutrality of official statistics, statistical confidentiality and the publication of statistical results. Besides, all transition countries are just on the way of introducing the SNA and, in this context, also the internationally applied classifications of basic statistics.

59. The newly industrialised countries of Asia and South America have made considerable progress in improving their statistical systems in the past few years mainly as a result of taking international standards as a yardstick. In those regions, the commitment of the UN regional agencies and their function as a forum for transmitting and adapting the norms and standards prepared at the UN level are of special importance.

60. The positive prognosis made for worldwide statistical cooperation is slightly marred by the developments in some mainly African countries which are about to completely lose touch with international developments. Due to political and economic instability, the continuous development of statistical infrastructures has been endangered time and again and in some countries even discontinued. The bodies of official statistics in some of those countries are even no longer in a position to articulate their need for assistance.

61. In the next few years, a great challenge will be to achieve an adaptation and implementation of international standards in differentiated ways for the regional and, if required, even Länder levels and, at the same time, to prevent excessively diverging developments. The UN regional agencies will play an important role in this respect; however, they depend on the active support of the other organisations and member states having efficient statistical systems.

62. The National Statistical Institutes of all regions will consequently have to intensify their commitment at the international level since international tasks cannot be fulfilled without their cooperation and preparedness to accept responsibility together with supranational and international bodies. The ambitious objectives of supranational and international statistics can only be attained if there is awareness of that joint responsibility and if the capacities available at the different levels of international cooperation and their comparative advantages are used efficiently.

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**ENDNOTES**

- 1/ See Pearson 1978.
- 2/ See John 1884, Günther 1940, p.3 ff.
- 3/ See Flaskämper 1949, p.235.
- 4/ See Günther 1911, p.11.
- 5/ See Günther 1911, p.12.
- 6/ See Mayr 1914, p.280 ff.
- 7/ See Hölder/Ehling 1991, p.16 ff.
- 8/ See Scott 1968, p.33, Altermann 1969, p.204 ff.
- 9/ See Zahn/Morgenroth 1925, p.18 ff.
- 10/ See Nixon 1960, p.5 ff.
- 11/ See Zahn/Morgenroth 1925, p.72 ff.
- 12/ See Henninger 1933, p.428 ff.
- 13/ The following remarks are partly based on Bürgin/Moore 1994, p.25 ff.
- 14/ See Mikkelsen/Griffin 1995, p.17 ff.
- 15/ Council Decision on the framework programme for priority actions in the field of statistical information 1993 to 1997, Official Journal of the European Communities, No. 9 219 p.1 ff.
- 16/ See Kenessey 1995, p.17ff.
- 17/ See Bartles/Fürst 1966, p.137 ff.
- 18/ See Menges 1981, p.1 ff., Fürst 1963, p.13 ff.
- 19/ See Buchwald 1995, p.149 ff., Feldman 1995, p.99 ff.
- 20/ See Lützel 1993, p.711 ff.
- 21/ See Huhle 1983, p.539 ff.
- 22/ See Denning 1950, Cochran 1953.
- 23/ See Weeks 1992, p.445 ff.
- 24/ See Granquist 1995, p.385 ff.

25/ See Fürst 1972, p.339.

26/ See Bjerve 1985, p.92 ff.

27/ See Keller 1995, p.115 ff.

#### BIBLIOGRAPHY

*Altermann, H. (1969):* Counting People: The Census in History, New York.

*Bartels, H., Fürst, G. (1966):* Über die Möglichkeiten und Grenzen des internationalen Vergleichs von Wirtschaftsstatistiken. Grundsätzliche Überlegungen, in: Allgemeines Statistisches Archiv, 50th Volume, No. 2, pp. 137 - 153.

*Bjerve, P.J. (1985):* International Trends in Official Statistics, in: A.C. Atkinson, S.E. Fienberg (editors): A Celebration of Statistics, The ISI Centenary Volume, A Volume to Celebrate the Founding of the International Statistical Institute in 1885, New York, Berlin, Heidelberg, Tokyo, pp. 89 - 108.

*Bruyn, G. de (1990):* Frankfurter Allgemeine Zeitung of 3 February 1990.

*Buchwald, W. (1995):* Harmonisierte Preisindizes in Europa - Voraussetzungen und Begrenzungen, in: Statistisches Bundesamt (publisher): Indizes - Status quo und europäische Zukunft, Contributions for the scientific colloquium held in Wiesbaden on 10/11 November 1994, Volume 28 of the Series Forum der Bundesstatistik, Stuttgart, pp. 149 - 155.

*Bürgin, G., Moore, W. (1994):* Leitlinien und Koordinierung der supra- und internationalen Statistik, in: H.G. Merk, G. Bürgin et al, in: Statistik 2000 - Zukunftsaufgaben der amtlichen Statistik, Commemorative publication on the occasion of the 80th birthday of Hildegard Bartels, Volume 27 of the Series Forum der Bundesstatistik, Stuttgart, pp. 25 - 44.

*Cochran, W.G. (1953):* Sampling Techniques, New York, London.

*Deming, W.E. (1950):* Some Theory of Sampling, New York, London.

*Feldmann, B. (1995):* Harmonisierung von Indizes in Europa, in: Statistisches Bundesamt (publisher): Indizes - Status quo und europäische Zukunft, Contributions for the scientific colloquium held in Wiesbaden on 10/11 November 1994, Volume 28 of the Series Forum der Bundesstatistik, Stuttgart, pp. 99 - 134.

*Flaskämper, P. (1949):* Allgemeine Statistik, Grundriß der Statistik, Part I, Second revised and amended edition, Hamburg.

*Fürst, G. (1972):* Wandlungen im Programm und in den Aufgaben der amtlichen Statistik in den letzten 100 Jahren, in: Statistisches Bundesamt (publisher): Bevölkerung und Wirtschaft 1872 - 1972. Published on the occasion of the

100th anniversary of central official statistics, Stuttgart, Mainz, pp. 12 - 83.

*Fürst, G. (1963):* Möglichkeiten und Grenzen einer Vereinheitlichung der Statistik in den Gemeinschaften, in: Statistische Informationen, No. 2, pp. 13 - 25.

*Fürst, G. (1972):* 100 Jahre Reichs- und Bundesstatistik. Gedanken und Erinnerungen, in: Allgemeines Statistisches Archiv, 4, pp. 336 - 363.

*Granquist, L. (1995):* Improving the Traditional Editing Process, in: B.G. Cox, D.A. Binder, B.N. Chinnappa, A. Christianson, M.J. Colledge, P.S. Kott (editors): Business Survey Methods, New York, Chichester, Brisbane, Toronto, Singapore, pp. 385 - 401.

*Grohmann, H. (1986):* Statistik als gesellschaftspolitische Aufgabe, in: Staat und Wirtschaft in Hessen, 4, pp. 103 - 108.

*Günther, A. (1911):* Die Geschichte der deutschen Statistik, in: F. Zahn (editor): Die Statistik in Deutschland nach ihrem heutigen Stand, Volume 1, Munich, Berlin, pp. 1 - 65.

*Günther, A. (1940):* Die Geschichte der Statistik - Historische Statistik, in: F. Burgdörfer (editor): Die Statistik in Deutschland nach ihrem heutigen Stand. Honorary issue for Friedrich Zahn, Volume 1, Berlin, pp. 3 - 9.

*Henninger, W. (1932):* Organisation und Tätigkeit der internationalen Statistik, in: F. Zahn, Allgemeines Statistisches Archiv, Jena, pp. 422 - 442.

*Hölder, E., Ehling, M. (1991):* Zur Entwicklung der amtlichen Statistik in Deutschland, in: W. Fischer, A. Kunz (editors): Grundlagen der Historischen Statistik von Deutschland, Quellen, Methoden, Forschungsziele, Papers of the Zentralinstitut für sozialwissenschaftliche Forschung of Freie Universität Berlin, Volume 65, pp. 15 - 31.

*Huhle, F. (1983):* Die Statistik in Deutschland in den 30er Jahren unter besonderer Berücksichtigung der sogenannten Repräsentativen Methode, in: Jahrbücher für Nationalökonomie und Statistik, Volume 198/6, pp. 539 - 556.

*John, V. (1884):* Geschichte der Statistik. First part. Von dem Ursprung der Statistik bis auf Quetelet (1835), Stuttgart (unchanged reprint, Wiesbaden 1968).

*Kenessey, Z. (1995):* ISI: Towards the 21st Century, in: Journal of Official Statistics, an International Review Published by Statistics Sweden, Volume 11, No. 1, pp. 11 - 20.

*Keller, W.J. (1995):* Changes in Statistical Technology, in: Journal of Official Statistics, an International Review Published by Statistics Sweden, Volume 11, No. 1, pp. 115 - 127.

*Lützel, H. (1993):* Revidiertes System Volkswirtschaftlicher Gesamtrechnungen, in: *Wirtschaft und Statistik*, 10, pp. 711 - 722.

*Mayr, G. v. (1914):* Statistik und Gesellschaftslehre. First Volume. Theoretische Statistik, Tübingen.

*Menges, G. (1981):* Grundfragen der internationalen Statistik, Lectures on the 51st Annual General Meeting of the Deutsche Statistische Gesellschaft held in Hamburg on 4 December 1980, in: *Allgemeines Statistisches Archiv*, 1981, No. 1, Volume 65, Göttingen, pp. 1 - 23.

*Mikkelsen, L., Griffin, T. (1995):* International statistical divisions, The Statistical Division of the Commission for Europe, in: *Statistical Journal of the United Nations*, ECE 12, pp. 17 - 26.

*Nixon, J.W. (1960):* A History of the International Statistical Institute, 1885 - 1960, International Statistical Institute, The Hague.

*Pearson, E.S. (editor) (1978):* The History of Statistics in the 17th and 18th Centuries Against the Changing Background of Intellectual, Scientific and Religious Thought, London.

*Scott, A.H. (1968):* Census U.S.A.: Fact Finding for the American Republic 1790 - 1970, New York.

*Weeks, M.F. (1992):* Computer-Assisted Survey Information Collection: A Review of CASIC Methods and Their Implications for Survey Operations, in: *Journal of Official Statistics*, an International Review Published by Statistics Sweden, Volume 8, No. 4, pp. 445 - 465.

*Zahn, F., Morgenroth, W. (1925):* Die amtliche Statistik in den Hauptkulturstaaten, Offprint from the Handwörterbuch der Staatswissenschaften, fourth edition, editors: L. Elster, Ad. Weber, Fr. Wieser, Volume VII, Jena.

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**SESSION 1: RECONSTRUCTING THE PAST**

**HISTORY OF STATISTICS - PROBLEMS AND PROSPECTS OF INTERNATIONAL COOPERATION**

Report submitted by the Federal Statistical Office of Germany

Corrigendum

Paragraph 4 occurs twice on page 2 of CES/SEM.35/SI/1.

The second paragraph 4 should be changed to read paragraph number 5,  
and all subsequent paragraphs should be changed accordingly.

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