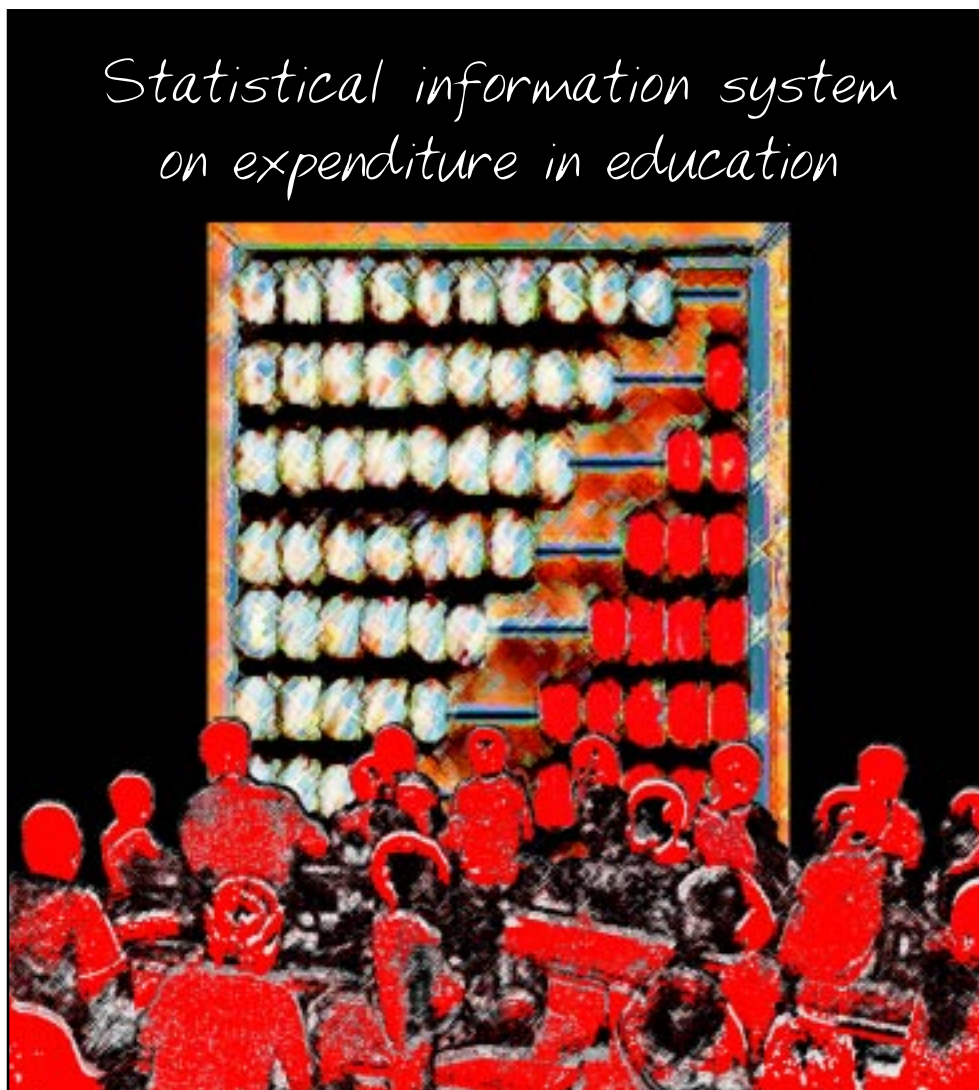


# S I S E E

*Statistical information system  
on expenditure in education*



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Administration manual

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S I S E E

*Statistical information system  
on expenditure in education*

by

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in co-operation with the Division of Statistics of UNESCO

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## Preface

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Statistical information on education system expenditure and funding is an important factor in policies concerned with the development and management of these systems. Collecting the information is usually a labour-intensive business, owing to the complexity of educational funding mechanisms, the large number of sources of finance, and the difficulty of gaining access to the relevant accounts data.

A technical module was therefore prepared in order to propose a **statistical information system on expenditure in education** such as to improve understanding of all these data. The module consists of two booklets: the **Technical Reference Manual**, which sets out a conceptual framework for constructing a coherent system for collecting and processing the information, and the **Administration Manual**, which describes how the information system may be introduced and used. These two booklets have been prepared as part of the project entitled 'National education statistical information systems in sub-Saharan Africa' (NESIS) with financial assistance from the French Ministry for Co-operation.

The NESIS project was begun in 1991 by the Working Group on Educational Statistics, set up by the Association for Educational Development in Africa (ADEA). The Working Group involved tripartite co-operation between the African countries, the technical agencies and the funding agencies. The principal members of the Group that contribute to the joint programme are bilateral co-operation agencies (Sweden, which is the lead agency, France, the Netherlands and the United States), multilateral agencies (UNESCO, UNICEF and the World Bank) together with the African countries taking part in the various pilot projects.

G rard Lassibille of the Institute for Education Economics Research (IREDU), University of Dijon, France, was invited to prepare this module and take on the task of overall technical co-ordination. The Technical Reference manual was drawn up by G rard Lassibille and Bernard Rasera; the Administration manual was prepared by Gilles Galod , also of IREDU. Luis Carrizo of UNESCO's Division of Statistics was responsible for technical follow-up of the project.

The original methodology was tested and adapted by the national teams in the pilot countries – Burkina Faso, Botswana, Chad, Madagascar and Senegal. Each of these countries prepared a national report which was used in the preparation of the booklets.

We hope that this undertaking will provide the necessary methodological and technical tools for national departments wishing to develop or improve their statistical information systems on the expenditure and funding of education.

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## Introduction

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The Statistical Information System on expenditure in education (SISEE) is intended to improve knowledge of expenditure on education by means of a global approach. The aim is to produce indicators that will elucidate the various aspects of education systems, in economic terms, and thereby evaluate the contributions to education by all the agents concerned. These cost and funding indicators will provide educational planners with the indispensable instrumental database for developing their analysis and forecasting, while managers in the field will benefit from an economic view of the system such as to assist their decision-making.

With budgetary constraints imposing increasingly severe controls on the allocation of resources, there is at present a conspicuous shortage of this type of information, needed not only for determining the most effective response to the demand for education, but also for drawing up any comprehensive and transparent review of the situation. This lack of information is easily explained by the diversity of the actors involved, and the scarcity and total heterogeneity of the financial data. SISEE adopts a pragmatic approach, acknowledging this state of affairs in order to extract most from it.

This principle lies at the heart of the approach used, and determines not only the conception of the framework and the methodological tools, but also all the ways in which the system is applied. On the other hand, some rigour is necessary in using this empirical approach, together with close observance of the definitions and classifications involved. Because the system is able to accept data from the most diverse sources, appropriate conceptual methods are then used to structure the information according to the system's classification criteria so as to produce data of the quality necessary for calculating indicators. This is the price of the system's operability.

The system itself has an inherent requirement for internal simplicity. Based upon a limited number of definitions, the methodology must adapt to the form of the education system without changing it, and make it possible for all the actors to be taken into account. This move into the real world is the task of the SISEE team: it presupposes a complete prior understanding of the few simple rules governing the use of the system, notably in defining the component units around which the information must be organized. It is on the quality of this transposition that the value of the entire subsequent process depends.

The system provides the basis for an evaluation of expenditure and costs that is intended to become a routine and continuing task of the host service, after the fashion of school censuses. Similarly, its functioning will rely entirely on the team set up for the purpose, which will determine and carry out the whole programme from setting up the system through to publishing the results.

Having described what is expected of the system, we shall now look into its application as regards the conceptual features of SISEE and its methodological requirements, and from the practical, implementation and administrative points of view. Notwithstanding this, the basic methodological options of SISEE do require a brief introduction with regard to the alternative approach and the choices made as regards the production of indicators.



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## I. General principles

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### 1. The issue: measuring contributions to education in a situation of scarce information

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It is possible to examine the value of such a system from different standpoints, depending upon whether one is referring to the present status of information in the education sector, or to the aims of the system, particularly as regards the management of the education system and the development choices.

#### ■ The methodological alternative: choosing to return to the sources

##### □ The gaps in the information

Let us begin with a statement of fact: apart from the budgetary data of the national ministry for education, there is at present no way in which the total financial resources deployed in education by all concerned can be grasped. The information coming from other sources is either precise but fragmentary, containing gaps or incomplete, or so approximate or 'theoretical' that it is unusable. In these circumstances, any attempt to obtain the whole picture from a few sparse and dissimilar facts is a waste of time, while the major data collections are subject to substantial margins of error or refer only to that part of the education system that is best documented owing to the fact that its funding comes from the public purse.

Thus many available data are invalidated by being unreliable and incomplete. Any attempt to collect information, whether by means of questionnaires issued by international organizations or through individual attempts at evaluation, encounters difficulties that are frequently insurmountable.

This situation should not cause surprise, in view of the large number of actors involved in the field of education, and the weaknesses of the statistical infrastructure; even the developed countries whose financial systems that have long been formalized and are in many respects simpler, have managed to develop this type of indicator only in the recent past (the 1990s).

Substantial national and international projects have been devoted to the question, and the history of this research reveals a great deal of hesitation about the type of approach to be adopted.

#### ■ From information to indicators: making sense of the descriptive analysis

The development of research on indicators shows that there has been a significant increase thinking about the issue of evaluating education funding: discussions about the definition of indicators, seeking to formulate expressions that are as pertinent and eloquent as possible, has seen the progressive return to centre stage of questions concerning the significance of the available or accessible data (as regards relevance and validity), and the organization of the resulting information. The schemes to improve statistical systems show this clearly.

The significance of the SISEE approach is based on the need for the methodology to return to the descriptive approach and to basic information, organized in an appropriate manner that encompasses a wide framework for data collection, uniformity in definitions of content and classification criteria, and data that are exhaustive and ‘marked’ with a quality index. However, to go beyond the stage of compilation, this determination to mobilize all available data, however heterogeneous and diverse, in order to calculate reliable indicators, is subject to a number of conditions:

- the information must be organized in a firmly established framework that complies with precise rules and explicit classification criteria
- the relationships between the different parts of the whole must be demonstrated and clearly defined so that the financial nature of their relations can be qualified
- there must be an understanding of how to compensate for missing information, if this situation arises, using appropriate methods and resources (estimates, inquiries, etc.)

The SISEE system incorporates these requirements: the rigour with which the classifications are applied determines the qualification quality of the data entered and hence the value of the indicators produced.

#### ■ Relevance and occurrence of a pragmatic approach

The purpose of the system – understanding educational expenditure – calls for some prior remarks on methodology to throw light on the SISEE approach by comparison with similar compilations of data or previous attempts at international appraisal.

#### □ The search for indicators

In the last two decades, attention was concentrated first on the definition of indicators or sets of indicators for the dual purpose of permitting comparisons and measuring effectiveness. The implicit assumption was that once the indicators had been formulated in theory, the required information, essentially screened using external criteria of comparability, was thereby also immediately defined, so that all that remained was to get on with collecting the data. This latter aspect of the process was, if not a question of secondary importance, then at least only a technical matter.

In fact, of course, this abstract approach, despite the considerable thought and resources put into it, frequently encountered the problem of the available data’s being inadequate, or purely and simply impossible to collect, and it became clear that the information demanded earlier in the process constituted the first limit on the calculation of the indicators that had been theoretically defined at the outset.

While the indicators thus found themselves, so to speak, ‘waiting for data’, the idea gradually took shape that scattered information might be collected together in order to prepare ‘education accounts’ that would give a coherent and systematic picture of how a country’s expenditure in this field was organized.

SISEE stems from this idea, and uses an approach based upon the diversity of the information available in order to record – using specific standards – the amounts contributed by all involved and how they are used, with ‘education’ defined according to ISCED. Quite apart from its pragmatic character, this is an ambitious choice, because it adopts a global approach to the funding of education using a procedure finalized by the production of a set of indicators that now constitute the product.

### □ The relevance of SISEE

Under the conceptual approach described above, the descriptive analysis must be rigorously defined in the frame of reference. SISEE provides the necessary methodological apparatus.

In each country, it is for the national team provided with this methodology to absorb its rules so as to ensure a valid transcription that remains faithful to the characteristics of the system in question. This task encompasses the whole process of applying the system, from the phase of introduction and normalization to national structures, through to that of calculating indicators, presenting results and publication.

At a time when systems of educational demography have made significant advances in organizing data collection and processing, with the result that comprehensive and reliable statistical tables are now available, the conditions seem right to tackle the financial aspects of education thoroughly in order to establish the cost indicators so indispensable to management and planning.

The current tightening of budgetary constraints and the difficulties of meeting a growing demand for education mean that forecasts of numbers in education must be accompanied by figures on the costs of achieving objectives. The corpus of information obtained through the basic financial indicators (for example, the respective contributions of the different sources of finance, or the relative importance of categories of expenditure) and the composite indicators (expenditure combined with educational demography data in order to produce, for example, unit costs) provides valuable information on the status of the system and, more precisely, fulfils a function of diagnosis and identification, but this input must, above all, illuminate the situation for those responsible for decision-making. As far as educational planning and aids to decision-making are concerned, the lack of this type of tool for evaluation and calculation is at present so obvious that discussing it would be superfluous.

### ■ Details of the method and task scheduling: transparency of the application

This progress in the methodological approach and the continued implementation that emerges from the practical standpoint takes on fundamental importance from a threefold point of view:

- the scheduling of tasks and the monitoring of the process (task flow chart and scheme of operations)
- the reasoned use of the method (meaning of terms, internal coherence and evaluation of the emerging statistical needs or feasibility)
- ways of organizing the team and developing focused consideration of the topic.

### □ Proximity of the analytical framework and the field of observation

The procedure of acquiring data involving adhering to a descriptive scheme for constructing a situation that is difficult to decipher in a coherent and organized system, means that the organization and pattern of the work must consist of a series of tasks easily discernible by all. This transparency of the method used means that those responsible for the operations can, at any time, see where they stand in an overall process whose intermediate goals, as well as the production deadlines, are known.

With SISEE it is possible quickly to project the methodological framework upon the actual education system, so that the extent and series of tasks can immediately be perceived: this should enable the team to organize itself accordingly. The methodological context, when transposed to the education scene, provides a system of direct location, effective in identifying those involved, scheduling tasks and, subsequently, collecting data and reporting progress. If problems or doubts arise, the team is then able jointly to consider the nature of the obstacles and the initiatives to be taken.

#### □ Methodological rigour and self-contained application

The capacity for interpretation required during application is in fact one of the key features of a system that is expressed in an operational manner, the cost being a certain degree of abstraction. The corresponding degrees of freedom will be the better assumed the more internal communication can reinforce an identical view about the significance of the approach and improve understanding of the rules, so as to remove the uncertainties inherent in the learning phase. This approach reduces the risk of errors of interpretation and creates conditions more propitious to the development of a self-contained application of the system.

It is worth pointing out here that the fact that the indicators are calculated by computer should not cause confusion. While this method does make a contribution by highlighting some of the choices of expenditure to be used for calculating indicators, a prerequisite for processing the data is a comprehensive and far-reaching review of those involved in the field and the relations linking them.

The conceptual framework proposed and the operational rules that stem from it do not constitute either a methodological yoke or a kind of analytical passport to reliability: it is a question of developing an approach and confirming its independent development, not only from the organizational standpoint but also from the methodological point of view, regarding which a number of choices will have to be made.

This emphasis on the operational aspect of SISEE at the outset may appear premature, but this pragmatic characteristic does in fact correspond fundamentally to the spirit in which the system was developed. Here, as elsewhere, the rapid acquisition of the rules of the game is a condition for success. Intellectual adhesion to the approach and the commitment of the team will be the more effective the more its members are able to perceive that they are running a process upon which a result depends. As to the external actors called upon to co-operate, they will clearly do so even more willingly if an explicit strategy exists: they can then evaluate the issues and see the importance of their contribution to the process.

Finally, we may add that the method's declared purpose and the international character of the application do require, in conception, a certain distance between the terminology and classification criteria in the frame of reference, and the national education systems of which SISEE must be capable of incorporating all the distinctive features. The comparability of results is of fundamental importance, but the methodological unit involved does call for continuous adjustment, transcription and adaptation to the particular conditions of each country.

## 2. Methodological review: operation of the system

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### ■ The nature of an information system

The term ‘information system’ is justified for a number of reasons. First of all it indicates the conceptual choice that has been made, that of a global, organized and systematic approach or, in other words, according to the dictionary, one that leads ‘with method in a particular order, to a determined goal’, the object being the expenditure of the education system regarded as a functional entity: the sum total of all the agents involved in an educational activity.

Since the sources of information are extremely diverse and usually not suitable for our purposes, the first objective after identification is therefore to distribute this ‘set of objects of knowledge in an order that makes its study more easy’.

The assumption is that information on expenditure exists or can be constructed, on condition that one knows how to recognize and use the existing sources by means of appropriate methods, in a methodological framework that is universal and stable.

With regard to the collection of information and the way in which the data are organized, the information system exists not only at the instrumental level, as a means of collecting data, but also at the methodological level as a ‘scheme for arranging the terms of a set’. In this context, SISEE offers an original way of organizing the information through the unique concept of a centre of expenditure, that takes into account all the actors according to the same standards and the same economic and functional classifications.

Finally, to regain a true perspective, this ‘co-ordinated set of practices tends to obtain a result’: the system produces – in the form of indicators – a new body of information giving a coherent image of the financial resources committed to education, on the basis of expenditure.

As ‘a set of practices, methods and institutions that form a theoretical structure and a practical method’, SISEE thus combines all the characteristics of a system, as an instrumental practical device and as a conceptual approach. From a functional standpoint, its implementation should be the easier the more its conceptual adaptability has been tested, but it also implies respect for its rules and fundamental definitions in order to produce valid results.

### ■ Sources of information and general organization of the system

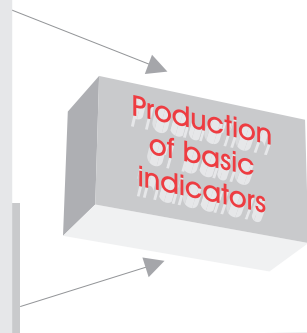
#### □ Basic information and production of processed information: a directed and finalized system

SISEE possesses the logic of a production system, to which the inputs are organized and processed according to a given but adjustable operational method, and the output consisting of simple or complex indicators. This process offers its operators the advantage of visibility, since the information is followed up and monitored from its initial state through to its definitive form after the indicators have been calculated.

As far as data are concerned, the rule is to use the information existing in the country (in budgets, survey data, information obtained directly from funding sources and centres of expenditure, and so on). This latitude as regards sources of information can in no way avoid the need to deal with the lack of data; estimation procedures then offer the next best alternative.

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### □ Accepting heterogeneity: the acquisition system

The sources of information, whatever their number and degree of diversity, can be classified into two categories according to availability: first, the basic financial data that already exist, routinely prepared by the funding providers in the field (accounts or statistical data) and, secondly, the data collected from the producers in this field whereby it is possible, to differing degrees, to identify some or all of the expenditure of certain funding providers, as well as its final use.

It must be stressed that this pragmatic concept, whereby the information system can abstract available information from a variety of sources, using an appropriate method, rather than counting on obtaining predefined information, is one of the fundamental aspects of SISEE, which could be described as being based on the real world.

The approach does have its limitations: although the information may be identified as such, it can usually not be used as it is, since the system is not designed to record data automatically. However, the fact that any form of heterogeneity is acceptable at this stage of finding data does give the system a considerable documentary power, and a potential for general description. Even though initially the objective may only be achieved unevenly depending on the actors involved, at least it sets none of them aside for reasons of method, and it can identify those upon which the impact of intelligence may subsequently be brought to bear.

This exhaustive review of the information available is in itself a significant initial result, and demonstrates a new type of concern with regard to those involved in the system who, whether acting separately or collectively, do not always have the opportunity to feel that they are involved in an overall educational perspective.

### □ Structuring the information: the administrative system

The methodology sees its first application at this stage, in order to introduce some rational order among those producing activities or funding, and ensure that the data can be formulated according to the rules and classification criteria that SISEE input demands. It is a matter of providing an overall structure, defining its limits and interrelations, noting what is missing, and transcribing the data relative to each agent according to the requirements of the system's own expenditure matrix.

This requirement for a methodical approach is accompanied by a requirement for quality, because this systematic interrogation of the subject and nature of expenditure, with a view to classification, acting through the screen of a matrix of definitions intended to be as simple as possible, must guarantee the uniformity of the information used and, as appropriate, make it possible to specify the ways in which the gaps and shortcomings in the basic information have been overcome. To give the greatest possible transparency to this idea of quality of information, and to certify it methodologically, the technical reference manual suggests that all data should be assigned a quality index.

### ■ The centres of expenditure

The transition from the descriptive view obtained from the sources, to the analytical and operational approach of SISEE, is achieved by grouping the information into the centres of expenditure. These constitute the operational units around which the information is organized and then classified in a detailed manner according to its economic and functional nature.

### □ Identifying and setting up centres of expenditure

Although the identification of centres of expenditure must comply with certain simple rules, there is nevertheless no single model or standard list, and the choices made for setting up centres of expenditure take into account:

- the background to the collection of information, the obligation to represent certain operational features, and certain important institutional characteristics of the national education system, such as the extent of decentralization, or the importance of private education and community funding;
- the instrumental need to procure, at the end of the process, a result that does in fact represent the sum total of the country's educational expenditure, forgetting nothing, omitting nothing, and avoiding duplication.

The generic term 'centre of expenditure' may therefore correspond to a broad range of institutional or economic agents: from the ministry not in the education sector but which has its own training school, to an NGO not specializing in education but involved in a feeding programme involving school canteens, not forgetting the sector of households using educational services.

The concept of a centre of expenditure is unconnected with any criterion of size or administrative status, even though from the practical standpoint, and in the case of public administrations, it is certainly appropriate to pick out all those that are involved in the field precisely as centres of expenditure. The basis of the relevant subdivisions applied thereafter may be micro-economic (the spending establishment) although it is best if there are not too many centres of expenditure, functional (where a programme or project is jointly funded by several organizations, government departments providing services, and so on) or finally institutional, depending on the sharing of responsibilities in this field between the central and local authorities.

However diverse and extensive the final list, the centres of expenditure are classified by institutional sector. This arrangement makes it possible not only to identify the different components of educational expenditure, but also the share of funding incumbent upon the public authorities (whether central, regional or local), as well as on households, businesses, non-profitmaking institutions, or other countries (multilateral and bilateral aid organizations, international NGOs).

### □ Scheduling of tasks

Once the field of education is defined, the first task is then – starting from the list of potential centres of expenditure that emerges from the identification of those involved – to determine the centres of expenditure that are relevant to the information, the observed situation, and the conduct of subsequent operations.

If institutional developments are expected (decentralization is on the agenda in many countries) or functional changes (ongoing educational reforms, deployment of certain programmes, definition of national priorities, etc.) it is much better in those circumstances to adopt a forward-looking view so that allowance may be made for these at the outset.

The step involving identifying centres of expenditure is a prerequisite. In fact, the nature of the financial links between the centres considered should be determined and recorded by the classification of expenditure. For this task of qualifying expenditure (as final expenditure, purchases or transfers) the complete list of centres of expenditure selected is essential, which means that their identification must be complete so that all their relationships can be determined.

As we have stressed, the process of drawing up the list of centres of expenditure is one of individualization, synthesis and combination or straightforward aggregation: it is therefore important to ensure that none are forgotten during the application of SISEE.

The analysis of tasks will provide an opportunity to return to this aspect of the procedure which, at this stage, closely links the technical considerations to the implementation steps.

## ■ Expenditure

Of the rules for defining and classifying expenditure, some apply to the expenditure itself (its nature, subject and context) while others refer to the financial links between centres. The application of the rules always reflects the concern to adhere as closely as possible to characteristics of real expenditure that can be directly observed, so that the classifications retain a concrete or effective aspect that minimizes the likelihood of departures from reality, the uncertainties of adjustment or doubtful approximations (which does not exclude soundly based estimates).

It is sufficient to note that the types of expenditure used (very briefly, since their simplicity merits little comment) are:

- monetary expenditure
- real expenditure, although it may be acceptable to rely on voted budgets, or planned expenditure when this is sufficiently certain, just as estimates are accepted once they are motivated and sufficiently explicit
- expenditure related to the activities of the general management of the education system, to educational activities, and expenditure arising from attendance at school.

Once expenditure has been defined, the system must qualify the nature of the financial operations observed between centres of expenditure or between them and the market for external goods and services. The latter raises few difficulties, but the inter-centre operations may well lead to duplication if the expenditure in question is not precisely identified and characterized in the classification matrix, as a final expenditure, transfer or purchase.

This brief presentation gives the essence of the rules for defining types of expenditure and the way they are used in SISEE. While not a practical guide – such is not its intention – it does suffice to show that the operational configuration of the system is based upon a few ‘key’ definitions surrounding a small number of specific concepts. The search for such an economy of means reflects the architecture of the information system, and a quick understanding of the rules will enable the practitioners to obtain a true evaluation of the empirical independence sought during its implementation.

### 3. The indicators

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The conventions defined above refer to what happens upstream of the information system, describing it from the standpoint of organizing data from initial to structured information. Unlike educational census work, in which the physical accounting units (students and teachers) are easily identifiable (or at least easy to count), expenditure belongs to a multiform order of reality which requires a number of conventions to be adopted beforehand: we have just indicated the principal examples.

In this context, the field of education described in terms of centres of expenditure, financial circuits, and functional and economic classifications of expenditure, is in itself a new formulation of reality. The end product is an information base that is coherent, homogeneous and exhaustive, and which by definition is closely related to the situation described of which it represents a standardized transcription.

At this stage, the information system now satisfies the conditions for the move to the higher descriptive level, that of indicators. In a way this is the third level of SISEE, seen as an information acquisition system, an information reading system, and finally an information producing system.

#### ■ Indicators and database

The desired indicators, being the system's output objectives, could have provided a worthwhile introduction, but this would have run the risk of reversing the conceptual order of SISEE (from existing information to indicators, rather than the reverse) and its empirical approach.

Although it receives less prominence, this contribution to the development of methods, means and tasks in the statistical and planning services of countries prepared to accept it, is an essential ancillary product of SISEE, and provides an opportunity to develop other aids to decision-making for which they already – or may on this occasion – feel the specific need.

It is usually and rightly stressed that indicators of any kind are meaningful only in terms of comparisons or when considered as part of a whole; those generated as output from the SISEE process satisfy this condition of significance. For one thing, all those involved in the field are considered, if appropriate, at several levels (national, regional and local) and, secondly, the system of functional and economic classification, which applies to all the agents, straightforwardly allows these indicators to be segmented and defined for the more limited sub-assemblies of the education system, or according to the economic and/or functional nature of the expenditure.

Incidentally, this aspect of the method demonstrates the system's evolutive and adaptive character. Depending on the segmentation criteria, there is in fact no reason why indicators other than those originally designed should not be constructed and incorporated in the computer program so as to create a stable corpus of indicators that would lend itself to international comparisons. The establishment of these specific indicators, for example at the request of other government departments, or for particular programmes, would broaden the field of action of the team, affirm its role and help enrich the sources of information.

## ■ Indicators and systems of indicators: the dimensions of interpretation

### □ Evaluating and understanding the interrelationships

The expectations of a system of indicators usually include the ability to interpret data with respect to others with no isolated meaning, to highlight the underlying causal links, to locate malfunctions and to identify weak points, the possibility of making international comparisons, and so on. This is not an exhaustive list but, in any event, the expected advantage is defined in terms of the desired interpretative coherence and the validity of the observation.

An isolated indicator can serve as a measuring instrument, for example of the extent to which an objective has been achieved, or the progress of a certain type of expenditure over time, but in itself it offers no means of contextual appreciation, and can in fact conceal substantial deviations or unusual qualitative phenomena. It would not be possible to base any analysis of effectiveness on a limited or fragmented reading of a few indicators, for to do so would be to risk neglecting a whole series of effects of complementarity, substitution, or absence, considering only those pertaining to the allocation of resources and expenditure.

The representational cohesion defined by a system of indicators expresses a requirement of higher order in terms of validity. The outcome is information of a kind different from that obtained simply by adding or juxtaposing terms, because this method of representation avoids breaking down reality or artificially isolating some of its features.

In the representation of the field by the information system, it can be broken down in such a way that the indicators restore the links of continuity by which it is governed (systemic nature). When the effects of interactions are included, the significance of the system of indicators goes beyond the sum of the parts considered separately. This consideration is decisive in terms of educational planning. Once the context demands, under given budgetary constraints, that one should move to increase overall efficiency with no particular prejudice, then any decision-making approach means that complementarities and alternative uses must be taken into account.

### □ The comparative approach

Finally, the importance of indicators being internationally comparable is not only documentary: knowledge of the relative positions of those concerned, particularly as regards costs, throws up fertile comparisons not only with educational demography data (such as rates of school attendance or teacher numbers) but also with the economic-institutional or structural characteristics of the education system.

The opening up of the context – to mention just this single aspect – helps renew consideration of the allocation of resources in national situations, while the comparative approaches allow other working assumptions and other practices to be explored.

- **Categories of indicators: segmentation, evolutive nature and quality**

- **Basic and composite indicators**

Depending upon the type of information sought, two categories of indicator are wanted: basic indicators and composite indicators.

- The basic indicators are strictly financial in character, and rely very little on external information. They represent major blocks of data characteristic of the education system, or trace the expenditure of agents, units or institutional levels, or they rank items of expenditure according to their economic nature.
- The composite indicators usually combine data on educational expenditure with data on general and educational demography, their particular field of application being the area of planning and cost simulation. Other types of external economic information may be involved in the calculation of indicators, for example when these pertain to relative contributions, financial priorities, or sectors.
- In each case the functional classification system is used to break down the indicators according to the classification criteria used: the status of establishments, the type of education, level, method or nature of the activity (administration of the education system, continuous training, canteens and boarding facilities, school medical systems, school transport, school-related activities).

- **Throwing light on quality**

From an instrumental point of view, the final issue is that the use of the indicators should continuously raise the question of how they were calculated and the degree of confidence that may be placed in them.

The ability of a system to embrace a great variety of sources is one of its advantages, but the user is faced with the problem that the information is of uneven quality. It therefore appears essential in the remainder of the process to keep an eye on this feature, and to assign to all observed or estimated data a quality index that describes the nature and precision of the information being processed. Ultimately the indicator produced from these data can be handled in full knowledge of the facts. From all points of view, this demonstrated transparency is one of the decisive factors in the credibility of the system.





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## II. Factors in the introduction and use of SISEE

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SISEE is both a comprehensive methodological tool, and a mechanism in which the tasks and their order of execution are clearly based on the problem being developed. From this point of view, the process itself, with information from many sources of many forms, its standardized structure (with centres of expenditure assigned to economic and functional classifications) with the aim of producing refined indicators, allows an intuitive initial view of the nature of the tasks and the order in which they should be completed.

One is mindful of the fact that the collection of information will require a great deal of intellectual and physical energy, and that the organization of tasks in the initial phase of application will depend primarily on this; when this task is completed, it will be possible to move on to the next one. This perception of a segmented chronology, taking one step at a time, is only partially realistic: it certainly applies at the microscopic level (that of centre of expenditure  $x$  or  $y$ ) but not to the process regarded as a whole. Although the order of events in the methodology is the same for each centre of expenditure, the process of gathering information does not begin everywhere at the same time and will not progress at the same rate on all fronts. Examination of how centres of expenditure in each sector are classified immediately shows that the collection of data covers a variety of time periods and methods of organization, according to the financial information they are able to provide. Thus a methodological phase that might, on first impressions, appear chronologically separate and homogeneous, does in fact reveal a complex content and demonstrates the limits of any uniform application of task sequences.

This heterogeneity is incorporated – both methodologically and functionally – in the mechanism and should not lead to any undue delays.

Once the centres of expenditure are identified, a particular work scheme is established for each sector in order to bring out the general organization of the mechanism. On the basis of the ‘master plan’, there then appears what one might call a critical path in the series of tasks to be carried out.

By its very nature, SISEE is an integrated process, with certain execution times being subordinate to others, but with each sequence including its own extensions. For example, if checks show that the available information for a particular centre of expenditure is wholly or partially inaccurate, incomplete or unable to meet the classification criteria, then ways of correcting the situation must be considered: these may be requests for clarification, preparing an inquiry questionnaire, recourse to estimation procedures, and so on. None of these issues can be resolved by the single person in charge of the centre of expenditure in question: the decisions taken will influence overall progress and the pattern of the team’s resources: plans of action, methods of co-ordination and choices of methods which are all choices of resources and ways of using time and human resources that must be considered.

Similarly, the introduction of data into the system can in no way correspond to a single time or be narrowly specialized from the functional standpoint. In other words, the original linear time must give way to overlaps and even to movements in reverse. Above all, it must yield to the external time requirements that are imposed on it as foreseeable or unforeseeable constraints. The fact that calendar and academic years do not correspond, the survey timetables to which it is imperative to adhere, or the delays in publishing budgets, all form part of these framing elements or factors of discontinuity.

This rapid review indicates the types of questions to be resolved in the application of SISEE:

- How is this new task to be integrated?
- How is the SISEE team to be defined within the host service?
- How should it be made up (number of people, their profiles)? What will be its needs?
- How to ensure co-operation (synergy) with the existing services?
- How should its relations with outside partners be defined?

All these questions are material for some and organizational for others; the life of the mechanism depends to varying degrees on their being resolved.

The answers cannot be given in a few pages. However, it is possible to supply some elements, to specify certain instrumental procedures of SISEE upon which the organization of the work depends, to draw up a provisional list of the tasks to be accomplished, to suggest possible modes of conduct, and to supply a few reference points for the following issues:

- Relations and external assistance: value and role of the sponsoring committee.
- Functional integration of SISEE.
- Membership of the SISEE team.
- Organization of the cell's tasks.
- Questions pertaining to training.
- Publication procedures.

## 1. The sponsorship committee: allocation of tasks and organization

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Implementation of the project involves substantial communications activity accompanied by tactical choices, and even a veritable information strategy. For this reason it is recommended that a structure for communications in the broad sense – covering advice, assistance, mediation, sponsorship, etc. – should be established between the SISEE team and the organizations and sectors involved in any capacity. This committee is likely to make one of the most effective contributions towards facilitating the installation of the system and ensuring its credibility by clarifying its purpose, showing how it responds to a need, and introducing it to the partners in the peripheral sectors: businesses, associations and miscellaneous groups.

Communications is not its only role: there are also a number of practical aspects:

- mobilizing information (definition, location and access)
- providing background information of interest to the work of the cell (educational reforms, institutional reforms, changes in funding, and so on)
- expressing specific requests from certain sectors with regard to the indicators and, more generally, proposals concerning questions of publication and circulation.

### ■ The mediation and technical roles

The function of the sponsorship committee is defined by the type of support expected from it and the limited membership envisaged.

The desire to bring into being a body whose role and tasks are those of a steering committee and a liaison group, together with a function of representing SISEE, is a response to different concerns that include those of the nature of the data and their availability.

More than any others, the financial data are difficult to obtain. This fact is not surprising, but ways and means are needed to cope with it. There are many constraints, some objective, others less so. The former include reasons connected with the technical nature of the data, the difficulty of finding a common terminology, the obscure nature of certain documents, and the clumsiness of certain accounting procedures that hinder access to the information and make it difficult to discern actual expenditure. Finally, certain agents in the private sector may have legitimate reservations when faced with requests of this type for the first time. Besides these technical considerations, there are others more or less related to the confidentiality of financial data or to the fact that those who possess them, for reasons of their own, are disinclined to pass them on.

In view of these various restrictions, the sponsorship committee can play an initial role of introduction and explanation vis-à-vis the agents or departments approached. The presence within the committee of representatives of the different actors in education should facilitate the requests for information sent to the sector concerned.

This is not the only aspect of the committee's role, because its assistance may also take forms that are more technical or related to relevant experience when it is a question of identifying certain actors in the field, conducting different sectoral inventories, locating certain sources of information, and determining how they may be accessed. Finally, when all attempts reach an impasse (where access is impossible, or the information unsuitable for entering into SISEE), the consideration of alternative approaches or practices can benefit from the experience of its members.

For example, when it is a matter of setting up special arrangements for collecting data, particularly from areas outside public education, knowledge of the sector's structures and of the way in which information circulates, such as may be familiar to the members of the committee, can be decisive in choosing a method of data collection and can contribute to ensuring its success.

Similarly, the committee members can give reasoned views about the ways of applying classifications, possible co-operation, the definition of specific information collection procedures, and finally as regards the indicators desired for their sectors.

These examples do not illustrate the entire range of the sponsorship committee's functions, but merely seek to give some examples to illustrate the multiple nature of its task: technical advice on the one hand, functional sponsorship on the other. The choice of members must therefore combine these two technical and mediating vocations.

#### ■ **Mutual information: plan of action**

The work of this committee will be the more effective the more it is able progressively to acquire a more thorough knowledge of SISEE, and to entertain a certain empirical familiarity with the system enabling it to:

- better to discern practical operational difficulties
- see milestones in the range of tasks
- grasp the progress of operations over time and approve the provisional schedule.

These conditions pertaining to co-operation are based on the assumption that the sponsorship committee is provided with a reference project and that, for this purpose, the SISEE team suggests to it a programme of action or master plan. Its form and content would be a matter for the team, but it would probably be wise to prepare it with a twofold objective of practical information on the tasks and their schedule, and explanations about the method and its objectives. The members of the committee, in their external role, should be able to discover all the information they need to present the objectives of the system, whenever appropriate, within their own professional spheres and to respond to practical or other questions.

Accordingly, such a programme of action validated by the sponsorship committee would then constitute a kind of mutual commitment. The committee, informed of the precise nature of the work to be done, gives its support to the undertaking, and agrees to assist its progress by appropriate ways and means if the programme should encounter institutional or functional obstacles that can be overcome.

#### ■ **Operation**

In formal terms, this is a standing committee that normally meets twice a year, although special meetings can be held at the request of either party, so as quickly to settle any difficulties that may present a substantial obstacle to the programme of work, or thoroughly to examine the consequences to SISEE of any major institutional changes.

Each meeting reviews the progress of the work and examines the content and schedule of the next phase, having regard to any modifications endorsed by the committee and jointly

defined guidelines. Confirmation of the actions to be undertaken renews the mutual assurance that the conditions necessary for their satisfactory execution do in fact exist.

In this rapid review of the tasks of the sponsorship committee, we have stressed its external role of communication concerning SISEE, but above all we have underlined its operational involvement. The committee should therefore have a limited number of members so that it becomes a kind of project group with due concern for satisfactory progress. At the same time, it should include representatives of the actors in the field as uniformly as possible, either as producers of educational activities or for technical reasons.

No standards govern the make-up of this sponsorship committee, and the choice of members will be dictated by the dual concerns of representativity and institutional effectiveness. It will reflect the national structures of shared responsibilities and specific intervention characteristics of the different public and private actors in the field of education.

#### ■ **Make-up of the sponsorship committee**

The committee could consist of representatives of the different ministries involved in the field of education together with representatives of the private education sector, NGOs, aid agencies, employers' and trades union organizations, and parent-teacher associations. It would also be valuable for the committee to involve the principal producers of information, such as the national statistics institute or the statistics departments of ministries, which could facilitate access to the data, undertake to rework data from existing surveys, supplement their particular information system according to SISEE needs, and assist the team in determining the methodology of its inquiries.

## 2. Setting up SISEE: functional integration

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Every country has its own form of administrative organization, but a Ministry of Education, with its own Statistics Service, a Planning Directorate, and a Costs and Finance Office is a common feature, a type of department which thereby lends itself to hosting and developing SISEE in the most satisfactory conditions.

In this connection it is worth recalling yet again that SISEE consists of an analytical framework and a method developed as far as its instrumental limits permit. Its value in use primarily depends upon and reflects the human resources assigned for the purpose: the necessary skills exist in the departments mentioned above, as does the know-how necessary for its implementation.

Thus there are no grounds for regarding SISEE as an additional burden or as a complex statistical structure to be grafted, more or less artificially, on to the organization and operating methods of the host department.

### ■ The methodological aspect

The pragmatic approach consists in regarding SISEE as the missing and hoped-for component of an information system that has so far operated essentially on the basis of school statistics, without being in a position to observe the corresponding expenditure, except through budgetary documents containing data that are frequently unsuitable and incomplete. From this point of view, SISEE is merely responding to needs that the potential host departments have already perceived and identified, but which have remained unsatisfied in the absence of any systematic method of observation or, one might add, one that is appropriate for international use and expression.

Although the field of school demography has a robust infrastructure and provides increasingly comprehensive statistics that are essential to educational planning, these activities can only express the results of their predictions in physical terms. Thus projections of student and staff numbers, often drawn up from a methodological point of view, do not extend to a financial evaluation that would enable the needs calculated elsewhere to be translated into cost terms. The enlargement of the field proposed by SISEE therefore forms part of a logical development of the service.

A clear expression of the significance of this process to all concerned may underline its logic and relevance, so that it may be inserted as smoothly as possible into the routine tasks and normal responsibilities of the host department.

The fact that the approaches employed in school demography, cost evaluation and expenditure forecasting are complementary should help everyone appreciate the end product of the different activities of the department, the interdependence of all these results having already been demonstrated.

SISEE occupies a key position: upstream the system depends upon educational demography data for calculating composite indicators (notably unit costs and expenditures), while downstream its results are used by the department responsible for forecasting and planning.

### ■ The functional aspect

This methodological and functional complementarity takes on other forms when it comes to executing tasks. Educational demography requires effective information logistics and this is usually in place. SISEE can then benefit from this organization so as, if necessary, to link specific data collection arrangements to the annual statistical campaign.

In all circumstances, 'inside' knowledge of administrative procedures, decentralization of services or regionalization of institutions should make it possible to locate the sources of information, and the inevitable intermediate points for collecting the information and, above all, for supplementing it, when this proves necessary.

Also it is not unusual, even in the most centralized systems, to find that certain regions, for geographical or other reasons, develop specific educational sub-systems, or original ways of funding educational activities or services related to school attendance (various practices for community funding of premises, teachers, canteens, etc.), all these being operational features that must be identified and re-expressed in financial terms. As a result of their position and fund of experience, departments such as those concerned with planning or statistics, able to take an overall view of the education system, appear to be the best able accurately to evaluate these particular features and to report on them.

Finally, in many centralized systems, decentralization is on the agenda, and it is important to be in a position to evaluate the actual or virtual consequences of this situation.

These few facts show that effectively implementing SISEE is not only a matter of technical skills, but also requires the experience of local situations, whatever the state structure. The membership of the working team must therefore take this into account.

All this confirms that the execution of SISEE cannot just be a matter for a small isolated technical group: integration into the host department meets a manifest need, since the methods of action and thought cannot develop in any dynamic way except on a basis of complementarity. Moreover, the acceptance of this functional dependency for the mutual benefit of the departments also represents a significant saving in resources.

### ■ Duration

To look beyond the set-up procedures, the final point deserving attention is the continuity of the system.

In its initial phase, the project will probably encounter hesitations, and some people will find it difficult to believe that comprehensive information will be obtained in the first year of application. Next comes a running-in period, and these stages form part of the normal development of a project, on condition that they are sustained.

The intention is that SISEE will become a permanent element of the statistical information system. This time element is as important to the internal programme of work as it is to the outside. All those involved in the system of funding or producing education must be aware that in the future they will regularly be called upon to provide information defined according to the SISEE criteria. This result can only be achieved if these various actors are convinced that the system will last, and on this point the sponsorship committee has an essential role to play.

Publication of results is another sensitive issue as regards both the demonstration of continuity and the integration of the system. This end result of SISEE gives it, from an internal point of view, a lasting functional character, and signifies to the outside that the task has been accomplished. Its significance is more than merely achieving a particular objective: just demonstrating the value of the mechanism creates the conditions for its improvement by reinforcing its position with regard to the sources of information. This provision of indicators also demonstrates the operational nature of the system, without which no external demand for other indicators would ever appear.

### 3. Membership of the SISEE team

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From the above remarks on integration and the sought-after savings, it is clear that SISEE must function on the basis of existing resources – including human resources. If some sort of costs cell exists, this can be the opportunity to extend it, or to seek – for certain data collection tasks – specific methods of co-operation which will be determined in particular according to what is available from the educational statistics services.

In other cases, there are various possible configurations, depending upon the staffing resources of the host service, the way in which financial responsibilities are shared among ministries, and the administrative organization of their reciprocal links.

#### ■ Administrative organization: breaking down barriers

Government structures take various forms, ranging from pure centralism with some administrative decentralization, to a federal approach applied to varying degrees; the ways in which educational activities are funded depend directly on these structures, and hence so do the sources of information used by SISEE.

The choices made regarding the composition of the SISEE team can be interpreted according to these types of organization, in view of the fact that in central government the distribution of responsibilities between the ministry of finance and the sectoral ministries, including that of education, can be organized in very different ways.

The principal option appears to be whether the establishment of this working group should or can provide the opportunity for a degree of decompartmentalization, and, if so, between what structures, since the barriers within a given ministerial structure may prove to be even more rigid than the boundaries between ministries having different responsibilities. Various possibilities can be envisaged, depending essentially on the funding model and on working practices.

The relevant choices may stem from two considerations: first, the accessibility to certain sources when the financial area is highly compartmentalized or even isolated and, secondly, the indispensable relational capability based upon knowledge of the structures. However, these remarks – already expressed in a somewhat different way with regard to the sponsorship committee – should not conceal the fact that the issue here is to set up a working group with all that that entails in terms of knowledge, experience, and the ability to work together.

#### ■ Skill profiles

The membership of the team should seek to combine several different skill profiles: this does not mean that the team should have as many individuals as profiles, but rather that any individual should embrace a number of them.

In the presentation of SISEE an attempt has been made to show how the different perceptions of the term ‘system’ were justified with regard to the organization and processing of information as well as for dealing with expenditure.

The first result is that a macroscopic point of view will be fundamental, not only in defining the approach to the sources of information, but also in analysing and classifying expenditure. This type of skill must once again be deployed from an even more economics-

based point of view in order to add comments to certain indicators to help to clarify them, and avoid the risk of mistakes in interpretation.

With regard to statistical techniques, the team will require the skills necessary for deploying the inquiry and estimating procedures that are defined in the technical reference manual. As before, it will also be a matter of helping to improve the definition of the indicators, notably by explaining the relevant technical constraints on calculation (limitations on data interpretation and reliability, statistical methods used, and so on).

Finally, familiarity with accounting practice and some experience of public finance form a valuable basis for the ability to define the data requested from the corresponding authorities, and to extract the best of the financial information collected in either raw or refined form. The establishment of a technical dialogue concerning the sources of information with the accounting professionals, or with contacts possessing this type of training, also requires commonality of language on specific points of terminology and financial procedures, in order to master all the relevant aspects. This is decisive in cases where access to the data is particularly difficult or involves some aspects of negotiation.

#### 4. Nature and organization of tasks

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As concerns the pattern of skills within a restricted working group like that of SISEE, the less the system demands the deployment at any time of a highly specialized and exclusive ability, the less likely is the imposition of a rigid distribution of tasks.

The execution process consists not only of a series of tasks accomplished in a methodical order, but also of a series of tasks conducted in parallel, or carried out specifically to supplement the original information, to set up the special collection system, or to make the necessary estimates.

In other words, within the framework of the methodology used, the features of the information offered by the various centres of expenditure considered will dictate different procedural modes. For some of these, the sequences will take place in accordance with the methodological plan in a linear scheme where the succession of tasks will correspond to the total duration of the provisional programme; for the others it will be necessary to define beforehand particular procedures for collecting data, and to envisage their execution as a function of external constraints (the timetable of the statistical campaign, the ways and means of accessing the files of the respondents, the periodic availability of data, and so on).

##### ■ Rates of progress according to centres of expenditure

Two different rates of working will appear in this way, and apart from the fact that each will require contributions from the members of the team at different times, it will be important that when that occurs, none of the members departs from the general sequence of the process or loses sight of any of the tasks.

The methodological unity of SISEE should, to the greatest possible extent, find its equivalent in the functions and organization of the tasks performed by each member of the group. When faced with a series of data collection problems that vary from one centre of expenditure to another, it is essential that all members should help resolve them so that the system is capable of integrating data from a variety of sources while ensuring a maximum of coherence. The ability of SISEE to accommodate this diversity implies adaptations of work rate and method according to the categories of centres of expenditure, as well as teamwork in order to secure coherent and homogeneous information.

These preliminary remarks show that the question of how tasks are organized must begin with consideration of their nature, which in an information system leads directly to the sources and to the ways in which they are organized into operational units which, for SISEE, are the centres of expenditure. The provisional schedules occasionally tend to forget these prerequisites, being under pressure to begin executing practical tasks that are easily identified and quantified.

##### ■ Individual skills, specialization, and the scheduling of tasks: team spirit and flexibility

The issue having been stated, the organization of tasks may, in a conventional theoretical scheme, show preference either for horizontal specialization (where a given person carries out a particular type of task for all the centres of expenditure) or vertical specialization (where one person handles all the data of a given centre of expenditure). Equally conventionally, the appropriate response is likely to be a kind of matrix structure in order to define a combination of these two modes of specialization according to the theory of organizations.

## ■ Modes of specialization and the sequence of tasks

- Vertical specialization has the drawback that it induces a narrow view of the funding system, bringing with it the risk of a limited understanding of the circuits involved. In particular, it can be the cause of errors in qualifying expenditure when an overall grasp of the relationships is necessary for analysing its financial nature. Also, this kind of specialization would lead to a distribution of tasks which, a priori, appears invalid. It would cause the members of the team to work at particular times according to the chronological availability of data and their type of presentation, and would be based upon the assumption that each member has all the skills required to deal with the complete cycle of tasks. This hypothesis is unrealistic and probably contrary to team spirit.
- Transverse or horizontal specialization has, to some extent, the opposite kind of defects with the same results. It is based upon the differences in individual competence and qualification so as to assign the tasks accordingly, and thus gives primacy to professional specialization with respect to the object. In such a case there is a danger that the system will lose meaning, as each member of the team merely applies technical know-how and understanding. As regards the organization of time, the problems are as great as before, with a functional dissonance that would substantially lengthen completion times, as the members of the team do their jobs in turn, so to speak.
- Accordingly, the most effective formula will be the one that mobilizes particular skills at times relevant to needs in the framework of integrated tasks where nobody is excluded from the collective process. This ability to co-ordinate and mobilize specific qualifications when required depends upon the composition of the group, but it would probably find its expression more quickly among people who had already had the opportunity to co-operate in the past, without this necessarily being a criterion of choice.

## ■ The follow-up tools

With regard to the internal and external visibility of the work carried out or to be carried out, it is important first to draw up a plan of action that gives a clear definition in time of the nature of tasks to be carried out for each category of centre of expenditure and, secondly, to draw up a programme of the same type essentially for internal use, treating each centre of expenditure in turn.

### □ Master plan

The first document is submitted to the sponsorship committee, which may approve it in order to enhance its scope and give its support. It would be desirable therefore that, after a rapid review, the document should already – to the greatest extent possible – set out useful details as to the particular methods of collecting data when information is lacking, so that the necessary support may be sought from the members of the committee.

This programmed scheme can also seek to set milestones and highlight the particular times at which it will be appropriate to review progress, so that methodological or tactical decisions may be taken without delay in order to move on to the remainder of the process with, as appropriate, agreement on the distribution of the resulting tasks.

Similarly, it will indicate those stages likely to justify more formal evaluation by the sponsorship committee or the responsible authority of the ministry.

□ **Management documents**

The second document for each centre of expenditure will be conceived more as a detailed management chart giving the complete list of centres of expenditure and the timetable of the relevant tasks. These will be defined by type, with an estimate of their time requirement and theoretical milestones for each category of centre, or for each centre, whenever necessary. On the basis of this reference scheme, and for each type of centre of expenditure, will be recorded all the information of every type, which forms the fabric of the normal operation of the system, or which the system may need in the short or medium term for the record.

This data log has the threefold value of setting out the corpus of information likely to concern – at some time or other – each member of the group, whether directly involved or not in the task or the centre of expenditure in question, constituting through continuous updating a comprehensive memory of the system, and providing a detailed situation report enabling the rapid preparation of ‘snapshot’ or exhaustive progress reports on the work.

This log is an internal document and primarily of an instrumental nature, being both diary and technical memorandum: it should be systematically completed whenever new information enters the system or when particular features of the task deserve to be noted or reported.

From the scientific standpoint, a technical document will have the purpose of setting out, in a very precise manner, the enquiry and estimating procedures used, with all the sampling characteristics, data sources and methods of estimation.

## 5. Training needs

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### ■ Team learning and training

SISEE is a comprehensive process and its implementation, with regard to both the situations encountered and the tasks to be performed, covers many aspects, some of which may be unfamiliar to the team members.

While the financial nature of the information dealt with is usually something new for those involved in operating the system, the methodological application, on the other hand, is based upon the existence and use of routine skills in the host services envisaged. Nevertheless the team members have to cope with an original conceptual framework, which they have to grasp, and the technical reference manual is the essential instrument for this learning process. Of course, individual reading of the manual, however comprehensive and didactic it is, is not enough in itself, and group consideration of the different chapters is necessary. Accordingly, seminars based upon particular cases could constitute an attractive way of moving the project forward. Also, using support software, like that supplied with SISEE and any other computer tool, also requires a learning phase based broadly on mutual advice and assistance, before all have grasped the logic and achieved the desirable familiarity with this type of tool.

From both these points of view, therefore, it appears that preliminary training, through internal exchanges arranged according to the team's profile of skills, is a factor for efficiency and one way of guarding against any wrongful interpretation of the basic concepts or definitions. Here too, these considerations should be underpinned by the key system characteristics, coherence and comparability.

It is important that SISEE should be understood as an entity so that its operational components such as classifications and definitions may also be grasped. General discussions and exchanges should provide direct answers to the group's most detailed questions, confirming the proper understanding of the terms and of the concepts on which the operability of the system is based.

### ■ The role of the team: external training and co-operation

Other training needs emerge when external co-workers – regardless of whether they belong to decentralized services – become involved in the data collection process or the preparation of surveys, possibly linked to school censuses or any other statistical campaign.

Such an organization will work satisfactorily only if those charged with administering and conducting the data collection perceive the principles and end results of their work. In particular they should be capable of evaluating the effect of the quality of their work on the rest of the operations and on the standard of the results. For each operator, this means assessing his or her own personal role in the process, and if the approach is to be effective, these temporary or irregular co-workers must be other than mere operators. A book of instructions, even together with a brief presentation, is inadequate. Those carrying out the survey should be initiated into the process and benefit from a presentation that involves them in it. These two points clearly depend upon the group concerned, but in any event it is important that the persons called upon to co-operate in this way should clearly understand what they are doing and why. The organization of the survey should therefore incorporate this concern, and make provision in its schedule for this staff training phase, possibly together with the necessary training links between regions.

Accordingly, the members of the SISEE central team will give presentations on the system to those directly involved or administratively responsible, at special meetings. This 'instruction' function will be more fully expressed during the training sessions at the time the collection procedures are launched, when the members of the central group can then 'train the trainers' for the regional inquiries.

## 6. Publication

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This final stage of the team's work is not simply a matter of formatting the results: it involves choices that will determine part of the audience of SISEE and the way in which it is perceived by those involved in education (funding providers, evaluation and research authorities and decision-makers). The act of publication confirms the operational nature of the system and delivers a new type of information – the indicators – with regard to which we may mention in passing that even in the more advanced countries they have existed for only a few years.

The system of indicators as presented is therefore a major innovation that takes a fresh look at education, so editorial questions deserve special attention. The publication of this first document will be particularly significant in that it will mark the beginning of the establishment of coherent series of indicators, to be the subject of regular publications in the future.

In this connection, the items to be considered are naturally focused on concerns of form, content and circulation.

### ■ The question of publication: financial indicators amongst other statistical data

With regard to form, having regard to the major trends, an initial series of questions arises concerning the statistical documents on education that are published at present. To put it another way: what is the position of the financial indicators with respect to existing publications on school demography and the way in which they are expected to develop, publication plans, circulation schemes, and so on?

#### □ Integration or separate publication

The fact that most countries already publish a statistical yearbook argues in favour of a separate publication, which removes the formal constraints of integration into an existing document and offers a self-contained working instrument that can be consulted along with the yearbook if necessary. There is another similar essential reason: the two statistical series are of different kinds, with the indicators representing information calculated according to a certain representation of reality, while educational statistics are based upon a sometimes elaborate census process together with statistics of change. If financial indicators were to be included in a compound publication, it would therefore rather be adjoining the so-called 'process' indicators on the operation of the system in physical terms.

#### □ A synoptic publication

This possibility is worth considering in particular when the education statistics services are able to add to the conventional tables of numbers with data on 'repeated year' frequencies, examination successes, successes and failures in examinations for diplomas at every level, and so on. There is, then, advantage in linking these operational indicators to the financial indicators in order to provide an approach to the field that prefigures its analysis in terms of effectiveness, and makes it possible, at the very least, to evaluate the efforts made in terms of human capital formation. Even though this form of publication appears at present to be a longer-term project, it does show how different categories of information can be mutually supportive.

## ■ Objectives, destination, presentation, circulation of publications

The foregoing remarks concerning the content of the publication, seen from the angle of the nature and significance of the indicators. The question then arises whether the expenditure indicators should be the subject of a single publication, or whether it would be preferable to produce at least two forms suitable for different purposes.

### □ Destination and circulation

This approach related to the novelty of publication thus invites examination of the various potential types of recipient, their expectations and the ways in which they may be expected to use the results.

Since the system is capable of calculating indicators on many sub-assemblies of the education system, or on precise categories of expenditure, and therefore potentially produces a large number of results, the alternatives are a single generalist document or a number of topical documents reviewing, for example, the expenditure of public administrations, that of households and foreign aid. The two types of document pursue different aims. Taking simplification to the extreme, two categories of objective can be targeted, the information objectives and the instrumental objectives. In the former case, publication should attract and retain attention, while in the second it should constitute a working tool and a reference document. At the outset, these two purposes determine fairly incompatible choices, selection against completeness, comments present or absent, and so on, even without involving the choices of presentation.

The decision is partly a matter of resources and partly a question of design, because a single publication, while in essence less expensive, may manage to reconcile the two objectives but prove costly as regards circulation, while, on the contrary, several separate publications may fulfil their purpose at less cost by targeting different groups. In fact, evaluating these publication costs comes down to examining the proposed circulation: in other words, asking what is the target group and the mode of publicity desired for the results. The margin of choice available appears wide, but here again the options chosen must retain the prospect of regular publication, if possible annual or biennial. The frequency of publication may depend on the selection of indicators, the ability to improve the data, the needs for updates, and so on, all factors that should then be the subject of a publication programme.

### □ Objectives, explanatory presentation

With regard to the presentation of results, it has already been stressed that the indicators cannot be provided without explanation. The minimum formula will be a brief introduction to the system, accompanied by the main definitions used by SISEE.

Short commentaries on particular indicators would also be worthwhile whenever a point of interpretation or method is worth taking up in order to improve understanding or to remove any risk of errors in use.

Here, too, the editorial background to the indicators is a function of the choices made regarding publication: whether it is a matter of a restricted selection of indicators with an essentially informative objective and a broad public, or an extended presentation of the results of a technical character for use by specialists in the field. The former category of information can deliver indicators accompanied by structured commentary on their form (economic interpretation, validity, nature of data) followed thereafter by an analysis of change, whereas the latter will place more stress on points of definition, the classifications, the nature of the data, all technical features essential to the practitioners.

□ After publication

Finally, if we take a look at the post-publication phase, the SISEE team will have to meet requests for information from organizations concerned by the subject (ministry of education, other ministries, local authorities, funding sources, professional associations, and so on). Apart from providing information on the system itself and on the results, the team's role will also involve receiving suggestions and requests concerning the study of indicators of more particular interest to some specific agent, level of execution or type of expenditure. It will therefore have to contribute to explaining these requests and looking into the possibilities of calculation.

This function of producing and circulating statistics on request should confirm and reinforce the position of SISEE to those involved in the field by leading to exchange procedures or even to lasting co-operation. The benefit of positive induced effects is also to be expected: improvements in the quality of information, better access to sources and, more generally, qualitative and quantitative improvements in the collection of data and the production of indicators. In any event, this aspect of the team's activity should ultimately lead to more comprehensive consideration as to the possible availability of the database on diskettes.





