Think Before Measuring

Methodological Innovations for the Collection and Analysis of Statistical Data

Jean-Luc Dubois
SDA Working Paper Series

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Methodological Innovations for the Collection and Analysis of Statistical Data

Jean-Luc Dubois
Integration of social and poverty concerns in the structural adjustment process in Sub-Saharan Africa is a major driving force behind the design of the World Bank's adjustment lending program in the Region. To further the goal, the Social Dimensions of Adjustment (SDA) Project was launched in 1987, with the United Nations Development Programme and the African Development Bank as partners. Since then many other multilateral and bilateral agencies have supported the project financially as well as with advice. The task presents a formidable challenge because of the severity of economic and social constraints in Africa and the intrinsic difficulty of tracing the links between economic policies and social conditions and poverty. It is essential to have a continuous professional dialogue between all concerned parties, so that the best ideas get discussed by the best minds, and become, as quickly as possible, available for implementation by policymakers. This is the aim of the SDA working paper series.

To fulfill its mission, the SDA Project operates on different levels. Conceptually, contributions need to be made which advance our understanding of how the economic crisis in Africa on the one hand and the adjustment response on the other hand affect the living conditions of people. Empirically, major improvements are needed in our knowledge of the social dimensions of life in Africa, how they change, and whether all groups in society participate effectively in the process of economic development. Gaining this knowledge will demand new efforts in data collection and policy oriented analysis of these data. Most importantly, policy actions are needed in the short term to absorb undesirable side-shocks stemming from the adjustment process so that the poor and disadvantaged are not unduly hurt, and in the long term to ensure that these groups fully participate in the newly generated growth. The SDA Project's mandate is to operate, in a concerted way, in all three domains: concepts, data, actions. This working paper series will report progress and experience in all three areas. I encourage every reader's active participation in the series and the work it reports on. It is meant to be a forum not only for exchange of ideas but even more importantly to advance the cause of sustainable and equitable growth in Africa.

Edward V.K. Jaycox
Vice President, Africa Region
The SDA Project has been launched by the UNDP Regional Programme for Africa, the African Development Bank, and the World Bank in collaboration with other multilateral and bilateral agencies. The objective is to strengthen the capacity of governments in the Sub-Saharan African Region to integrate social dimensions in the design of their structural adjustment programs. The World Bank is the executing agency for the Project. Since the project was launched in July 1987, 33 countries have formally requested to participate in the project.

The project aims to respond to the dual concern in countries for immediate action and for long-term institutional development. In particular, priority action programs are being implemented in parallel with efforts to strengthen the capacity of participating governments to (a) develop and maintain statistical data bases on the social dimensions of adjustment, (b) carry out policy studies on the social dimensions of adjustment, and (c) design and follow up social policies and poverty alleviation programs and projects in conjunction with future structural adjustment operations.

The working paper series “Social Dimensions of Adjustment in Sub-Saharan Africa” aims to disseminate in a quick and informal way the results and findings from the project to policymakers in the countries and the international academic community of economists, statisticians, and planners, as well as the staff of the international agencies and donors associated with the project. In the light of the three terrains of action of the project, the working paper series consists of three subseries dealing with (a) surveys and statistics, (b) policy analysis, and (c) program design and implementation.

The Surveys and Statistics subseries focuses on the data collection efforts undertaken by the SDA Project. As such, it will report on experiences gained and methodological advances made in the undertaking of household and community surveys in the participating countries to ensure an effective cross-fertilization in the participating countries. The subseries would also include “model” working documents to aid in the implementation of surveys, such as manuals for interviewers, supervisors, data processors, and the like, as well as guidelines for the production of statistical abstracts and reports.

The Policy Analysis subseries will report on the analytical studies undertaken on the basis of both existing and newly collected data, on topics such as poverty, the labor market, health, education, nutrition and food security, the position of women, and other issues that are relevant for assessing the social dimensions of adjustment. The subseries will also contain papers that develop analytical methodologies suitable for use in African countries.

Another subseries, Program Design and Implementation, will report on the development of the conceptual framework and the policy agenda for the project. It will contain papers on issues pertaining to policy actions designed and undertaken in the context of the SDA Project in order to integrate the social dimensions into structural adjustment programs. This includes the priority action programs implemented in participating countries, as well as medium- and long-term poverty alleviation programs and efforts to integrate disadvantaged groups into the growth process. The focus will be on those design issues and experiences which have a wide relevance for other countries as well, such as issues of cost-effectiveness and ability to reach target groups.
Table of Contents

Executive Summary 1

Preface 2

Introduction 4

1. Identification of the Information Desired 6
   Link between Information Needs and Information Collected 6
   Conceptual Framework and Ambiguity of Concepts 7

2. Collection of the Information Identified 10
   Subjects for Investigation 10
   Choice of Survey Strategy 13
   Construction of Information Systems 14

3. Analysis of the Information Collected 18
   Data Processing 18
   Process of Microeconomic Analysis 19

4. Conclusion 20

Annex 1. Synthesis of Major Themes in Methodological Innovation 21
Annex 2. Glossary of Technical Terms 23
Annex 3. Abstracts of Major AMIRA Papers 25

References 49

Figures
1. Techniques and Results of the Relationships Between Information Needs and Information Collection 7
2. Example of Decision Levels-Objectives Matrix 11
3. General Table of Social Classification 12
4. Comparison of Some Investigatory Methods 16
5. Example of an Information System: The Different Investigatory Methods and How They Interact 17
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Executive Summary

This paper presents a number of ideas and innovative methodologies in the field of statistical investigation. It reviews the work carried out, between 1975 and 1991, by the research group AMIRA (Improvement of Investigation Methods and Applied Research for Development). This group, composed of anthropologists, sociologists, economists, planners, and statisticians, with considerable experience in developing countries, has set itself the objective of contributing to the improvement of statistical investigatory methods in order to better reflect the complex socioeconomic reality of the developing world.

The resulting methodological innovations aim at providing information adapted to the needs of policymakers, using specific concepts and tools within a conceptual framework more akin to the reality observed. They relate to the following aspects: the link between information needs and survey objectives, the difference between macro- and micro-economic perspectives, the complementary nature of quantitative and qualitative approaches, the design of rapid surveys and the implementation of information systems, the units of observations and the decision levels, and social categorization. Their presentation in this paper will match the successive stages in statistical production, for example, first, identification of information that should be collected; second, collection of information; third, analysis of the collected information.

This Working Paper, financed by the French Ministry of Cooperation and Development with support from INSEE, has already been published in French by the AMIRA Group under the title Réfléchir pour mesurer: innovations méthodologiques pour la collecte et l'analyse d'informations statistiques. It is now published as part of the SDA Working Paper Series because the ideas it develops are similar to those providing the conceptual basis for the statistical operations of the Social Dimensions of Adjustment (SDA) project.

The SDA Project is a vehicle for studying and measuring the social impact of development programs and economic reforms currently being implemented in Africa. Since it is essential to analyze and understand the key features of the socioeconomic reality of African countries before fully appropriate development actions can be advocated, the project must search for methods which will capture that reality as fully as possible and connect it with the economic policy recommendations it proposes to implement. Thus, the work of the SDA project is motivated by the same concerns and goals that gave rise to the formation of the AMIRA Group. It is therefore logical that the project build on the methodological innovations advocated by the group and bring them into the practical realm as an integral part of specific projects.

Concepts such as micro-, meso- and macroeconomic levels, information systems and socioeconomic groups are essential to an understanding of the logic underlying the SDA project. Furthermore, a number of projects focused on the social dimensions of adjustment in particular countries have recommended the use of rapid surveys of household living conditions or of expectations with regard to project benefits, thereby incorporating qualitative considerations. Similarly, committees consisting of producers and users of information now seek to reinforce the link between information needs and survey objectives. These are methodological factors which, while treated in this Working Paper as innovations, have already become accepted practices in the formulation and design of projects concerned with the social dimensions of adjustment or with development.
Preface

On first approaching his originally ill-defined subject, the scholar immediately prepares to measure it. He discusses the conditions surrounding his study; he determines the sensitivity and reach of his instruments. In the end, it is his method of measurement rather than what is to be measured that he describes... One should think before measuring, and not measure before thinking.

—Gaston Bachelard

La Formation de l’esprit scientifique

Can any straightforward, worthwhile, practicable lessons be drawn from the work of the AMIRA Group? The question is a not an unreasonable one.

The individuals and teams making up this group and network have now been at work for a good 12 years. Coming from very diverse backgrounds and intellectual traditions, they have focused on numerous problems in survey work, research, and analysis. While generally unconcerned with formulating strict technical prescriptions, they have not shied away from sometimes vehement debate, undoubtedly clarifying certain questions in the process but also raising others. All this has not made it easy to provide a synthesis of their thought. Nevertheless, in the present Working Paper, this has been done, and great care taken to demonstrate the coherence of the results obtained. In this way, it proves that the original blueprint for the group was well-conceived. But what was that blueprint?

During the first half of the 1970s, some clear-sighted statisticians were growing uneasy about the limitations evident in their survey work in Africa. Although useful, and even initially indispensable in rectifying an almost total absence of comprehensive economic data, their statistical investigations were giving no more than a shadowy and simplified picture of realities more complex than had been suspected. Even when corrected by stratification procedures, the postulate of homogeneity on which the random sampling process was founded became difficult to uphold. National or regional averages which might possibly satisfy the macroeconomist were affording no grip on the real, local problems of agricultural and rural development. Despite the lack of official interest in agriculture, the far-sighted had come to realize that what was occurring—or, rather, not occurring—in Africa’s rural areas was governing everything else.

AMIRA first chose to direct its attention toward rural areas in Africa and the Malagasy Republic, its primary concern being to improve statistical survey methods and techniques. Its recommendations are well-known today and are outlined in this paper: identification of pertinent categories in the societies under examination, better delimitation of units of observation, use of a dynamic model to represent the societal structure more meaningfully, and so on. In order to ensure the success of this considerable undertaking, it was decided to bring together periodically a group of professional statisticians, research specialists in the social sciences, and development specialists: while not an official body, it would have the support of the Cooperation Department of INSEE, the French Ministry of Cooperation, and ORSTOM. Actually, those in the development specialist category, less easy to win over than members of the other two groups, were mostly consultants specializing in research and evaluation groups, rather than in management and hands-on administration of development. In other words, they bore a marked resemblance to research specialists, and when all is said and done it was between research on the one hand and statistical practice on the other that these opportunities for contact, dialogue and exchanges of views, which are still the raison d’être of the AMIRA Group today, were initiated and developed.

Some individuals have claimed that the AMIRA Group was born of the discovery of sociology and anthropology by a few nonconformist statisticians. However pithy, this is an unfair judgment, and it is amusing to be able to turn it back on its proponents.

The AMIRA Group was also born of the sincere concern among certain economists with sociological inclinations to allow room for the practice of the statistical arts, assess their advantages and shortcomings, put them to good use wherever possible, and explore all their repercussions. One result of this was that statisticians began to hold forth on social differentiation,
while anthropologists and economists looked into the respective advantages of purposive and random sampling, asking themselves how the findings from a case study were to be generalized, or attempting to model the way units of production, consumption and accumulation interact with one another.

What have been the great moments in this long story? Personally, I remember most vividly the heated debate about the stages of transition which developing countries go through, and the indicators which best signal those successive stages. I also recall the review of the methodological content of ORSTOM publications and the seminar that followed at INSEE, in June 1983. This was the moment when the concept of the information system was explored and clarified. But many other exchanges—with the European Centre for Economists and Statisticians from Developing Countries (CESD), for instance, or with the Research Unit for African Sociology and Geography—helped to eliminate misunderstandings, compare approaches and pave the way for reconciliations. Although this brief paper does not allow a full account of this creative ferment, one certainly feels its presence throughout the text. In concluding, let me make two observations.

Undoubtedly, the principal outcome of the adventure has been the birth of an awareness that is irreversible. Specialists in many fields have understood how far the descriptions that we offer remain, by nature, remote from what they are attempting to depict. Created over the course of a long process of selection, reduction and construction, the statistical image is a fiction, plausible perhaps, but one whose supporting columns of figures give it no particular vantage point on reality. In most cases, statisticians work with declarations made to their subordinates, and the figures they put together are, at best, no more than mere indications, signs or glimmerings. Equally equivocal are the genealogies, life histories, and narrations passed on to researchers by their investigators. In other words, our only real meaningful work lies in the hypotheses we risk formulating and the models we dare to construct. But neither models nor hypotheses have any direct link with a reality that is almost always unsuspected, multiform, and ambiguous. The link, if it exists, comes through the hazardous medium of enumerations and interviews, through the more or less controlled betting of statistical extrapolation or intuitive induction, through the more or less skillful ordering of statements that may be hazy or eloquent.... What detours, what pitfalls! And how ridiculous the arrogance of the innocent who expects to go right to the heart of things! Fortunately, such arrogance is thoroughly out of place today. Statisticians have given up many of their illusions, as have research specialists. All of them recognize that accountings, maps, and descriptions provide no more than belated, ex-post evidence of the outcome of practices that can be guessed at only with difficulty. Demographers are well aware of this: the recording of rates and variations in rates serves only to raise questions that are virtually unanswerable. We observe and manipulate what we call “facts,” whereas development lies entirely in the realm of the “to be done.”

My second concluding remark may seem offensive, but I wish to be lucid. Rural economics, and particularly African rural economics, never had a privileged place in prestigious, mainstream economic science and the activities of the AMIRA Group were, objectively speaking, conducted on the fringe, far from the epicenter of the major issues and the resounding debates. This estrangement and decentralization have been providential. Kept at some distance from orthodoxies and noisy conflicts alike, we were able to work in the interstitial space allowed us by a number of powerful but fairly tolerant institutions. In the arena of development research, the game is therefore not entirely lost. If we had suspected it might be, this paper is here to assure us of the contrary.

Philippe Couty
Introduction

The socioeconomic reality of developing countries, particularly those in Africa, is extremely complex. This complexity manifests itself in the role and economic functions of individuals, the nature of the relationships among them, the resulting articulation of social groups and the hierarchical structure of the decision levels through which they function. Since all these are factors which must be taken into account if development programs are to be pertinent to the context, effective and sustainable, it is essential to analyze the socioeconomic reality at the outset in order to understand all its characteristics, discover the mechanisms underlying it, and identify the processes that may help to change it.

This is what gave the impetus for formation of the AMIRA Group (Improvement of Investigation Methods and Applied Research for Development) in Paris in 1975, under the auspices of INSEE (French Institute of Statistics and Economic Studies) and with the help of ORSTOM (French Institute for Cooperative Research in Development). Composed of anthropologists, sociologists, economists, planners and statisticians with wide experience of the developing countries, the Group set itself the objective of contributing to the improvement of socioeconomic survey and research methods as they related to development policies and operations. In the course of doing so, it has produced a steady stream of material advocating methodological innovations in macroeconomic planning, project and program evaluation, and statistical investigation. It is this last discipline which is the particular focus of this Working Paper.

AMIRA Group publications in the field of statistical investigation largely concentrate on methodological innovations that have to do with creating a conceptual framework more akin to the reality observed, developing a methodological approach geared more accurately to the needs of economic decisionmakers, and proposing specific technical tools. In more precise terms, these innovations can be grouped under 10 major headings, namely:

- Relationship between information needs and survey objectives
- Difference between macro- and microeconomic perspectives
- Complementary nature of quantitative and qualitative approaches
- Methods of investigation
- Design of rapid surveys
- Formulation of a survey strategy
- Information systems
- Units of observations and decision levels
- Social categorization
- Statistical tools.

Their presentation in this Working Paper will match the successive stages in statistical production, in order to preserve their coherence as an ensemble which links information needs to the purposes of the analytical process and to the modes of investigation employed. Generating statistical information means proceeding through three stages: first, it is determined what information should be collected; next, the information determined on is collected; and, lastly, the information collected is analyzed.

The first stage consists in establishing a link between the information needs expressed by decision-makers and the objectives of the research, so as to ensure that the data collected, qualitative or quantitative, will be pertinent and to keep the cost of the process and the time it takes to a minimum.

The second stage consists in setting up an information system which complies with the stated objectives, whether macroeconomic or microeconomic. This system utilizes the concepts of unit of observation, decision level and social category to identify the subjects for investigation and propose appropriate survey strategies.

During the third stage, processing of the data allows a move to be made from the sample to the universe, by extrapolation, and from the level of microeconomic observation to that of macroeconomic analysis, by aggregation. Analysis of the results allows differences in behaviors to be pinpointed, through the use of factorial and typological methods of analysis, and these behaviors to be explained by introducing causality.
To keep this approach each part of this paper relates to one of these three stages: identification of the information desired, collection of the information identified, and analysis of the information collected. The annex presents a summary of the most important sources, articles and documents produced by AMIRA, that have been the basis of the principal innovations examined here.
1. Identification of the Information Desired

The first and obvious necessary step of statistical investigation is to identify the information that should be collected. In practice this requires an often difficult step, namely the establishment of a link between the information needs expressed by policymakers and the data that will in fact be collected.

**Link between Information Needs and Information Collected**

Unless this link is understood, data collection cannot be confined to the data that are strictly necessary, nor therefore can the cost incurred and time taken in generating them be kept to the minimum.

Obtaining a proper grasp of that link means understanding the four stages which make it possible to determine needs, deduce from them the objectives of the investigation process, distribute those objectives by field of analysis, and rank them in order of priority.

**Determination of Information Needs**

Information needs are determined in the course of meetings between those who need data as a basis for their decisions, and those who are to produce it. The difficulty lies in the fact that such needs are often expressed in too vague a form to be directly serviceable (Winter, 1975). To be properly identified, needs must be thoroughly discussed in the course of meetings with potential users. This is a way to ensure that only essential information is collected. It is at this point that the ongoing dialogue which should exist between the users and the producers of the information is initiated (Winter, 1983).

**Definition of Objectives**

Once the information needs have been determined, it becomes possible to deduce from them the objectives of the investigation process. This calls for the use of simple economic reasoning based on sociological observation of phenomena, and on knowledge of economic theories. If the purpose is to measure the impact of devaluation on household food consumption, this reasoning means studying both the products affected by the devaluation and the households which consume them. A similar approach is followed in evaluating the impact of the elimination of subsidies on particular food products. In both cases, economic analysis consists of pinpointing the variables most likely to reflect the impact of the devaluation or of the elimination of subsidies. Such variables as total expenditure, product quantities and prices, household characteristics and incomes will be observed to highlight the relationship between consumption on the one hand, and prices and incomes on the other.

**Distribution of Objectives**

Distribution of objectives by field of analysis and by type makes it possible to identify the most appropriate investigatory methods for collecting the desired information (Verneuil, 1983). The fields of analysis are the different facets of household economic life—for example, farm production, food, nutrition, budget expenditure, and so on.

The types of objectives are: microeconomic, when they have to do with knowledge of agents' socioeconomic behavior; macroeconomic, when the data of interest are aggregated at the overall level (Winter, 1978); qualitative, to describe the appearance of a phenomenon; and quantitative, to measure that phenomenon. For example, if data on consumption are being assembled, a distinction is drawn between the assessment of quantities consumed (the quantitative aspect) aggregated at the national level (the macroeconomic aspect) and knowledge of substitution phenomena (the qualitative aspect) at individual household level (the microeconomic aspect), (Verneuil and Winter, 1978).

**Ranking of Objectives**

Ranking objectives in order of priority according to decisionmakers' needs helps reveal how different investigatory methods can best be meshed (Winter, 1975).
These four phases in the process of deciphering the relationship between information needed and information to be collected are depicted in the accompanying Figure 1. The corresponding techniques are shown in parentheses.

Of these four techniques, economic reasoning is the pivotal one, and therefore that which demands most attention. There have been many instances where, for lack of any previously established line of economic reasoning, considerable volumes of data have been collected that have never been used to meet the needs of economic policymakers (Baris and Couty, 1981; Winter, 1978).

If this reasoning is to be correct, it must be founded on a thorough knowledge of socioeconomic reality and fit into a consistent and appropriate conceptual framework.

Conceptual Framework and Ambiguity of Concepts

All consistent economic reasoning implicitly involves a conceptual framework sufficiently inclusive to allow systematization of the thinking process.

The conceptual framework that currently provides the validation for development actions fails to ensure the effectiveness of projects chosen for implementation. Since this is principally a consequence of the ambiguity of the underlying concepts, it becomes necessary to ascertain to what extent new elements can be incorporated that will allow construction of a more appropriate model of reality.

Inadequacy of the Conceptual Framework

The present conceptual framework relied on for the planning and programming of development projects derives implicitly, as far as its practical application is concerned, from the classical and Keynesian conceptual approaches.

From classical theory, it inherits the idea of rational behavior on the part of economic agents: that of the producer farmer or consumer household, whose rationality consists in maximizing profit or satisfaction, as the case may be, within constraints presented by production factors or by questions of budget and time. This rationality is viewed as the result of a single decision at the farm or household level which remains uninfluenced by constraints in the social environment.

Keynesian theory brings a macroeconomic vision of the development issues. Projects are viewed in a national setting. Their purpose is to develop the modern agricultural or industrial sectors and to increase production, while at the same time keeping the major economic equilibria in step. Households, businesses, and farms are regarded simply as economic agents whose behavior is undifferentiated on the national scale.

The national accounting system is the measuring tool par excellence for tracking these aggregates, which reveal the economic situation of a country at any given moment and allow changes in it to be monitored at the macroeconomic level (Winter, 1975; Thévenin, 1978, 1980).

The methods of investigation employed therefore aim primarily at generating the figures required in drawing up the national accounts, and so tend primarily toward the quantitative and the macroeconomic—involving baseline surveys, income and expenditure surveys, and so on. (Hallu, 1978).

Sociological observation of the behavior of economic agents, however, leads to a number of objections regarding the shortcomings of these conceptual approaches:

- The concepts utilized are not always pertinent. As a rule they are geared to a certain level of aggregation, they tend to be out of touch with socioeconomic reality, which by definition is largely nonaggregative. In other words, the national accounting system defines concepts relevant at the macroeconomic but not necessarily at the microeconomic level: this is true of the definition of occupation and the economically active population (Ancey, 1975c), and also of households and holdings (Ancey, 1975e). Moreover, these concepts, proper to a strictly macroeconomic viewpoint, often do not facilitate the observation of phenomena, and hinder full

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Figure 1 Techniques and Results of the Relationship between Information Needs and Information Collection

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<td>Information Needs</td>
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comprehension of the society studied. This is the case, for example, where production systems or sharecropping are concerned, since the same concepts do not have the same meaning in one society as in another (Ancey, 1975c). Thus, there is an intrinsic difficulty in unifying the concepts unless a more inclusive view of societal changes can be introduced.

- Socioeconomic reality is complex and the logic followed in planning has too great a tendency to simplify it. For instance, the significance of certain phenomena not easily reflected in the accounting process may be underestimated—output in the informal sector, self-supply and own consumption in households, and transfers between social groups. This ignorance of particular microeconomic behaviors leads the planner into making too many assumptions in such important spheres as smallholder productivity, the link between food and nonfood production, the role of women in the society, and so on. (Ancey, 1975a).

- Rationality among economic agents is often different from what the planner implicitly recognizes as such. Producers often seek security rather than maximization of their output (Hallu, 1975; Gastellu, 1978), and consumers may emphasize prestige or authority at the expense of material satisfaction (Ancey, 1975a). Furthermore, economic agents reach their decisions by complex, hierarchically ranked processes closely linked to the social environment, where specific objectives are associated with each level of decision-making (Ancey, 1975a,d).

Some simplification is inevitable if a relationship is to be established between microeconomic phenomena observed, and methods of macroeconomic analysis which aim at workability. The whole problem is one of finding what approximation is tolerable at the macroeconomic level and what simplification is acceptable at the microeconomic level. The implication here is that the conceptual framework currently in use needs to be broadened to encompass the complexity of the developing economies (Winter, 1975). There is a formidable task, hardly begun as yet! Not only must certain contributions from Marxist thought and economic anthropology be assimilated, but also others from economists as difficult to classify as Hicks, Polangi or Schumpeter, not to mention historians like Braudel or Hopkins.

Modification of the Conceptual Framework

The need to modify the conceptual framework arises from the need to take account of the socioeconomic complexity of developing societies, to understand the mechanisms of development, in particular the behavior of economic agents, and to integrate them in a historical perspective (Winter, 1975; Ancey, 1975b).

- The proposals for one such conceptual approach to societal shifts (Charmes, 1975a, 1976a) show that the ambiguity of concepts is linked to the transition process developing societies pass through. The motive forces behind this process are accumulation of a surplus and distribution of the surplus among social groups (Charmes, 1976a).

Three stages of transition or shift can be distinguished: neutralization, absorption and dissolution. At the neutralization stage, the entire surplus created by the collective group is utilized by it or its representatives for socially mandated ends. At the absorption stage, an intensification of monetary circulation brings with it the possibility of individual accumulation, which is channeled toward satisfaction of the needs of the collective group. At the dissolution stage, utilization of the surplus becomes more and more individual and serves for the satisfaction of individual needs.

This pattern provides a basis for analyzing all societies in transition (Charmes, 1976b). When a society is hardly integrated into monetized production channels, there is little place for concern with social effects. But once monetized production increases under the impact of development policies, concern with the different social categories and their behaviors becomes indispensable (Charmes, 1976a).

Study of this transition pattern gives a different view of developing societies (Winter, 1975). It calls for understanding of the behaviors of economic agents, description of the processes of societal transformation, and establishment of a relationship between observed microeconomic behavior and the type of macroeconomic measurement required for management of the transition. Accordingly, recourse must be had to the work of anthropologists, sociologists, economists, statisticians and planners (Charmes, 1975a) and greater importance given to historical analysis (Thénevin, 1978). The search for and finetuning of indicators of transition is the best method of monitoring and measuring this process.

- Interactive systems analysis is a method of integration which takes account of the complexity of socioeconomic reality and is capable of encompassing its ramifications (Thénevin, 1978).

Such analysis consists of a number of stages: identification of the key variables associated with the processes of development; definition of policy objectives; measurement of the microeco-
nomic effects of policy changes; and creation of scenarios through which to simulate the macroeconomic consequences. This provides a way to assess the impact of changes at the microeconomic level on the national economy. Statistical information plays a fundamental role in this approach since it is the instrument par excellence for understanding and measuring the interrelationships between the two (Thénevin, 1978).

It is an approach that serves as point of departure for devising improved methodologies (Thénevin, 1978), for using income distribution as monitoring variable (Charmes, 1975b), for studying the social differentiation ascribable to societal transformation (Marty, 1986), and for developing measures of labor supply (Ancey, 1975e) goods supply, and market prices (Verneuil, 1983).

Thus, the inclusion of transition processes and the more systemic view of the particular society provide the wherewithal for reviewing the statistical tools in use and tailoring them more effectively to socioeconomic reality. There is a natural inclination to supplement the conventional methods of investigation, more oriented toward the macroeconomic understanding of quantitative phenomena, with new investigatory methods more focused on explaining both qualitative and quantitative phenomena at the microeconomic level (Winter, 1975).
2. Collection of the Information Identified

The first step in collecting information, once it has been precisely identified, is to develop an information system which meets the objectives in view as fully as possible (Ancey, 1984). Necessary preliminaries to this are: identification of the subjects for investigation, and then selection of the appropriate survey strategies.

Subjects for Investigation

Subjects to be investigated are observed from three different vantage points (Couty, 1984): that of general coverage of the phenomenon of interest, which is thus described; that of the categories of statistical units affected by the phenomenon, which is thus characterized; and that of the phenomenon itself, whose importance the investigator attempts to measure.

General Coverage

The concern here is to pinpoint the subjects for investigation by means of an exhaustive consideration of all the elements that particularize them. The criterion of exhaustiveness in the collection process takes precedence over investigatory precision and detail.

The methods of general coverage in common use are censuses of the population; censuses of farms, enterprises or businesses; and directories of villages or registers of human settlement.

Some use may also be made of village registers (Gasse, 1978). Though such a register is a system for continuous observation which covers the entire country and contains data for which the primary statistical unit is the village, it is distinguished from the simple directory of villages by the fact that in addition to enumeration it provides qualitative information that can be used in the stratification and measurement of effects produced on villages.

Aerial photography, or remote sensing by Landsat and Spot satellites, allow systematic and continuous monitoring of land-use changes (new cropping patterns and extension of arable areas) and development of spatial differentiation criteria (Lake and Touré, 1985). These are elements which represent in geographic terms any changes in the behavior of economic agents.

Village registers and remote sensing are very clearly techniques that fall within the definition of instruments of general coverage; besides allowing the necessary exhaustiveness, they provide a qualitative view of the phenomena under study since they bring history (the time dimension) and geography (the spatial dimension) into the picture.

Categories of Statistical Unit

From this vantage point the researcher seeks to identify: types of statistical units, decision levels, and the objectives associated with them and socioeconomic groups.

- Several approaches to the identification of statistical units are possible in theory. In practice, however, the concern has to be with easily identifiable characteristics, probably connected with the unit of residence and with kinship (Verneuil, 1983).

A three-stage method may then be used (Gastellu, 1978): (i) pinpointing of the decision center; (ii) search for an everyday term in the vernacular to designate this unit; and (iii) collection of information that facilitates understanding the composition of the unit by studying relationships among individuals. Recourse can also be had to matrix analysis for the classification of individuals in terms of their economic roles and decision levels (Ancey, 1975a,f).

Even if historical study of the statistical units used in different surveys reveals the presence of common general traits (Hallu, 1978), it is virtually impossible to identify a single simple and universal criterion that determines where the statistical unit begins and ends. This depends on the extent of each individual’s participation in one of the economic functions considered: production, consumption, accumulation (Ancey, 1975f; Verneuil, 1983; Gastellu, 1978). Universality can come only from a method of analysis where study and selection focus on the various decision levels and their associated objectives, the unit then provid-
ing the best source of information (Surgers and Verneuil, 1978).

- Linkages between decision levels and objectives of statistical units.

Social and economic reality is generated by actors who have objectives and take decisions in order to achieve them. These actors are persons or groups of persons: units of residence, production, accumulation, and so on. Their decisions are not all of equal worth, since some actors automatically take precedence over others. Thus, there are various decision levels, and a decision structure may link the actors together. Since each level has its own objectives, a matrix can be constructed which arrays the different levels and the objectives corresponding to them (Ancey, 1975a). This matrix-based analytical approach has wide application and shows up the relationships among the actors present, the decision levels on which they stand, and the objectives associated with those levels (Ancey, 1975d). It integrates fully with interactive systems analysis, since successive comparisons via the matrix allow changes in relationships over time to be monitored (Ancey, 1975a) (see Figure 2).

- Determination of population categories by grouping relevant statistical units points up the social disparities that exist within a society and any possible resulting antagonisms, thereby facilitating analysis of the processes of change.

These categories are useful in constructing a stratification of the universe when investigatory techniques are being set up. The stratification criteria in current use, based on classical sampling procedures, are not always appropriate to the objectives in view (Thénevin, 1980; Surgers and Verneuil, 1978). Some of them are generally ignored: geographic location and village size (Hallu, 1978). Others are too crude, like the ethnic group criterion (Couty, 1979). Many are revealed only subsequently (income group, socio-economic category, and household size) and have no impact on formulation of the sampling plan, so that inaccuracies of analysis are introduced (Verneuil, 1983).

The construction of social categories produces results that are classified according to pertinent criteria and provides the planner with target population groups that can be used to measure the impact of his decisions (Thénevin, 1978). This approach is indispensable in the monitoring of current structural adjustment policies.

Various methods of determining these categories have been proposed for the informal sector (Oudin, 1986; Heuzé, 1986) and for rural environments (Marty, 1986). Concepts found in the general vocabulary can serve as starting points: descriptions of housing arrangements, family relationships, traditional hierarchies, political organization, and relations with the outside world. Mechanisms of differentiation (in particular the forms taken by production, exchange, and accumulation) can be studied, as can characteristics of individuals and relationships among individuals. This method of proceeding gives a systemic view of the phenomena of interest (Marty, 1986).

An example is given in Figure 3. The socioeconomic reality is divided into three interactive subsystems: the first one opposes the rationale of obligation to the rationale of monetization, to explain behaviors; the second uses characteristics of individuals for their differentiations; and the third is based on their social and economic role. Since these three subsystems are interactive a cross-analysis of their categories have to be done. For instance, sex, age, and lineage are more related to a rationale of obligation than education or even residence. It is the same for the category of notables as opposed to the one of poor farmers.

The investigatory methods suitable for collection of the corresponding data are case studies and descriptive sampling surveys.

Figure 2  Example of Decision Levels-Objectives Matrix

<table>
<thead>
<tr>
<th>Objective Decision Level</th>
<th>Subsistence Production</th>
<th>Cash Income</th>
<th>Security</th>
<th>Prestige Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second borns</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>First borns</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Production group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumption group</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residence group</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Lineage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Village</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Figure 3 General Table of Social Classification

<table>
<thead>
<tr>
<th>Sub-system 1 (Rationality Spectrum)</th>
<th>Sub-system 2 (Characteristics)</th>
<th>Sub-system 3 (Social Categories)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rationality of Obligations</strong></td>
<td><strong>Notables</strong> (chiefs, officials, aristocrats, marabouts)</td>
<td>holders of new technologies</td>
</tr>
<tr>
<td><strong>Rationality of Monetization</strong></td>
<td><strong>&quot;newly&quot; rich (resident or absentee)</strong></td>
<td>middle-income farmers</td>
</tr>
<tr>
<td>Sex: M children</td>
<td><strong>large landowners (traditional)</strong></td>
<td>poor farmers (migrations)</td>
</tr>
<tr>
<td>Age: lineage</td>
<td><strong>&quot;estranged from power center&quot;</strong></td>
<td>landless workers</td>
</tr>
<tr>
<td>Lineage: sedentary (fixed)</td>
<td><strong>personal dependents</strong></td>
<td>sharecroppers</td>
</tr>
<tr>
<td>Type of life: mother</td>
<td><strong>sharecroppers</strong></td>
<td>semi-salaried</td>
</tr>
<tr>
<td>Language: place</td>
<td><strong>&quot;underclass&quot;</strong></td>
<td></td>
</tr>
<tr>
<td>Residence: birth rate</td>
<td><strong>spongers, beggars</strong></td>
<td></td>
</tr>
<tr>
<td>Demography: type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education etc.</td>
<td></td>
<td><strong>(lumpen proletariat)</strong></td>
</tr>
</tbody>
</table>

**Notes:**
- Preferably to be read bottom-to-top;
- Categories in Sub-system 1 to be crossed with groups differentiated in Sub-systems 2 and 3;
- The eight horizontal categories (and on occasion some of their component groups) (Sub-system 3) to be related to the major heading under which each comes in the Obligation-Monetization spectrum.
Case studies give a precise and detailed picture of the way a society is functioning and changing. The anthropological and sociological approach they use reveals the behavior of economic agents and their part in the transformations the society is undergoing. Such studies are essentially qualitative and focus on small samples of statistical units selected cautiously. Besides pointing up the qualitative aspects of behaviors, they also measure these through the use of quantitative indicators. Case studies examine small samples selected in the light of information needs either randomly or purposively. They make it possible to pinpoint decision centers, actors' objectives, and criteria by which the population subdivides into social categories (Gastellu, 1978; Couty and Winter, 1983).

Descriptive sampling surveys are rapid surveys of large samples representative of the population. They employ the analytical categories defined beforehand by a case study and make it possible to estimate the numbers in each of those categories. By means of stratification, they also allow more effective second-stage sample selection of households (Couty and Winter, 1983). Often no information is available from a prior case study to define the analytical categories; in these circumstances, recourse is had to the descriptive sampling survey for collecting this information and for defining the criteria by which these categories are to be characterized.

However it should be emphasized that to a certain extent village registers, discussed earlier as a method of general coverage, also enable analytical categories to be characterized.

Measurement of Phenomena

Economic phenomena are measured by investigatory methods that provide information in aggregated form—macroeconomic indicators and tabulations reflecting an overall state or situation. These data are the substance of such macroeconomic analysis frameworks as the national accounts, price indexes, and projection models used in planning (Winter, 1975; Thévenin, 1978; Ancey, 1975b; and Verneuil, 1983).

The criterion of precision in measurement is paramount and is founded on the representativity of the data collected. On this score, extensive surveys have been contrasted with qualitative surveys, regarded as giving the full picture (Ancey, 1984).

Types of quantitative survey (baseline and statistical) are: budget surveys, income-expenditure surveys, surveys on prices, and output, among others. They were much in vogue in Africa between 1955 and 1975, when over 50 were conducted in the French-speaking countries of the region (Hallu, 1978).

The drawback to such surveys is that they attempt to cover too many objectives so as to respond to needs for macroeconomic data; in doing so, they often become large-scale multi-purpose exercises which take a long time to analyze.

This problem can be avoided by ranking survey objectives according to priority and then relying on specific surveys to attempt measurement of particular phenomena: agricultural surveys to measure the output of food products, income-expenditure surveys to measure consumption, surveys of businesses or enterprises to measure distribution, and so on. Coordination (as to timing and location) of such surveys means that exercises on too large a scale can be avoided (an illustration of this is given in Winter and Verneuil, 1978).

Choice of Survey Strategy

Any survey operation can be broken down into a series of different stages in the course of which are chosen the techniques that appear best suited to the accomplishment of the survey objective (Dubois and Blaizeau, 1990). A list of such stages can be identified:

- Handling economic reasoning, which requires that information needs be taken into account and that the corresponding analytical objectives be formulated.
- Structuring of the data to be collected and analyzed, which requires definition of levels of analysis and identification of levels of observation.
- Planning of the survey conceptualization process and the survey budget.
- Selection of the population and the sample, which requires definition of: household and collection units, representativity, sampling method, geographical location of households, and choice of persons to be interviewed.
- Assembly and amplification of existing information, which means seeking out currently available data and possibly conducting a descriptive sampling survey to supplement them.
- Selection of observation methods, i.e., type (daily, retrospective), frequency of reporting, collection planning, respondent participation, sensitization of households, and reporting techniques (direct or indirect observations, weights, measures).
- Drawing up of questionnaires, i.e., sequence of questions, decisions on naming conventions, preparations for coding, drafting of interviewer's manual, composing of questionnaires, and field-testing of them.
Hiring of survey personnel, i.e., their recruitment, training, management and supervision.

Collection of data.

Preparation of data, i.e., coding, entry, and cleaning.

Linkage of data sets, i.e., assessing the consistency of the data, and creating variables and data bases.

Analysis of results, i.e., descriptive analyses and micro- and macroeconomic analyses.

Dissemination of results, i.e., comparison against other data sources, framing of documentation, and publication of findings.

**Differences in Survey Strategies**

Integration of the technical choices made at each of these above stages plays an essential part in definition of the right survey strategy.

There may be a case for using strategies that contrast predominantly microeconomic surveys with predominantly macroeconomic ones. If so, choices then focus chiefly on the techniques that may be used.

Strategies which contrast rapid with large-scale surveys may be called for. In this case, the necessary choices have as much to do with the resources that must be put into play (lower costs and more stringent scheduling) as with the techniques (Thénevin, 1983).

If the integration of investigatory methods that have different objectives is to be successful, there must be a clear vision of the stages making up the process and of the technical choices that each involves.

Contrasting of microeconomic objectives focused on understanding the behavior of economic agents and macroeconomic objectives focused on obtaining data at the national level for the national accounting system calls for the use of different survey techniques (Surgers and Verneuil, 1978). The same is true for rapid surveys, more oriented toward the identification of qualitative characteristics and their changing patterns, and large-scale surveys, more concerned with the measurement of flows and magnitudes (Thénevin, 1978).

**Microeconomic Objectives and Survey Techniques**

Thus, for example, where the objectives are microeconomic, the range of choice is as follows:

- A permanent sample, with repetitive schedules, rather than a rotating sample.
- Purposive rather than random sampling techniques in selecting sample units, to ensure that the different categories of unit are properly included in the sample. Random sampling on the other hand means using a combination (timing and location) of sampling methods (Verneuil, 1983).
- Techniques of grouping survey units into homogeneous categories rather than techniques of drawing stratified random samples. However, the use of classification criteria to effect these groupings when plans for sampling at several stages are being formulated raises problems. If stratification is based on first-stage classification criteria, then second-stage sample selection is no longer independent and therefore not really random (Verneuil, 1983).
- Retrospective rather than direct observation of phenomena. Already available data can be used to fill in any data gaps to some extent.
- Emphasis on correcting observation errors rather than avoiding sampling errors.

**Rapid Surveys and Purposive Sampling Techniques**

Contrasting rapid and large-scale surveys means that different techniques must be adopted. With rapid qualitative surveys, purposive techniques are preferred to random, the associated sampling error being offset by improved observation of the universe and by incorporation of already existing data (Ancey, 1984). But the quality of the data produced—and they do offer the advantage of being quick to obtain—may largely satisfy the requirements of the planning authorities.

**Construction of Information Systems**

An information system is the outcome of the combination of various investigatory methods. If it is to be of optimum quality, a clear relationship must be established between the mandated objectives of the investigatory process and the investigatory methods chosen.

**Research Objectives and Methods of Investigation**

A properly enunciated objective calls as a rule for a specific investigatory method (Winter, 1978).

For example, if the objective in view is the estimation of household consumption for purposes of the national accounts, use will be made of a specific survey focused on the value of the quantities of staple products consumed (including family self-supply) by all households as a group. If the objective is knowledge of the structure of consumption in a peculiar household category, for purposes of a price index, use will be made of a specific survey focused exclusively on the products purchased by the population group in question, the level of detail per product being very refined (Verneuil, 1983).
Practical difficulties arise when several objectives have to be met at the same time, since they may be contradictory as far as the investigatory methods they call for are concerned. For instance, there is a contradiction between estimating household consumption for the national accounts and discovering the structure of consumption for the price index. Estimating household consumption does not call for the very refined level of detail per product on which construction of the price index depends, and it is concerned with the population as a whole and not with a specific category (Verneuil, 1983).

Satisfying several objectives therefore involves compromises which can undermine the effectiveness of the investigatory method selected (Winter, 1978). An ill-considered mix of microeconomic, macroeconomic, qualitative, and quantitative objectives increases the risks of failure (Ancey, 1984). This is true, for instance, when the same survey combines a demographic component, where the objective is quantitative, and an anthropological component, where the objective is qualitative (Gruenais and Lacombe, 1985).

Obviously, then, it is essential that objectives be enunciated with great clarity and that they be distributed by field of analysis and by type before the right investigatory methods can be chosen. Subsequently, the different methods will be combined within an information system.

Integration of Qualitative and Quantitative Concerns

Economic policymakers do not rely only on sources of quantitative information in attempting to reach rational decisions (Ancey, 1984). They depend on qualitative information as well, since data on the broad picture—which are generally quantitative, being obtained by aggregation—are sometimes not utilisable because they are too removed from social and economic reality (Heuzé, 1986). Moreover, qualitative survey findings enable causality to be introduced between variables, which is indispensable in analyzing quantitative survey data.

Above all, the quantitative and the qualitative should not be regarded as conflicting. Instead, advantage should be taken of the complementary nature of the two approaches in the search for information systems in which each investigatory method retains its specificity while validating the other (Couty and Winter, 1983).

In practice, this requires that sociologists, anthropologists, economists and statisticians cooperate more and more closely with one another. The predominant voice, often that of the economist, should be validated by that of the sociologist in such areas, for instance, as the determination of social categories (Heuzé, 1986).

Optimal Mix of Investigatory Methods

Obtaining an uninterrupted and detailed flow of qualitative and quantitative data on all spheres of economic life is an impossibility: the costs of doing so are far too high considering the data quality level that satisfies decisionmakers. Moreover, a high proportion of this information would never be utilized. The answer is to find the combination of investigatory methods that generates information likely to fit actual needs (Ancey, 1984). Such a combination allows the best kind of information system to be set up.

The difficulties associated with multi-purpose surveys (Gruenais and Lacombe, 1985; Hallu, 1978; Verneuil, 1975) provide the impetus to look for a system of specific-purpose surveys which is well-articulated as regards timing and site location. A consistent framework of observations must therefore be designed where each objective is tied to a specific survey component in such a way that each component will be enriched at least cost by the support afforded by the others (Thénevin, 1980).

Distribution of objectives, by field of analysis and by type, makes it possible to distinguish the simplest and commonest operations from the most complicated and unusual (Verneuil and Winter, 1978) and to base the choice of appropriate investigatory methods on their respective advantages.

An information system able to accomplish these objectives will combine investigatory methods associated with all three vantage points: general coverage, characterization of categories of statistical unit, and measurement of phenomena.

Remote sensing and censuses will serve to locate statistical units and point up essential characteristics. Village registers will provide first-stage stratification criteria at village level. Qualitative investigatory techniques such as case studies will complete the data collected through exhaustive coverage methods and will determine second-stage criteria of social categorization and of stratification. Descriptive sampling surveys will allow assessment of the numbers of inhabitants corresponding to those stratification criteria. Quantitative surveys will generate macroeconomic data while providing validating links with case studies and descriptive sampling surveys (Gasse, 1978) (see Figure 4).

A number of developing countries are currently using this approach to obtain knowledge of the informal sector. What it actually does is to incorporate within a specific information system a census of business establishments, a descriptive sampling survey, case studies on producers, and a quantitative sample-based survey (Charmes, 1982).

An information system may therefore be defined as follows: different investigatory methods, each focused
Figure 4  Comparison of Some Investigatory Methods

<table>
<thead>
<tr>
<th>Criteria Methods</th>
<th>(1) Cost</th>
<th>(2) Topicality</th>
<th>(3) Explanatory value</th>
<th>(4) Quantitative relevance</th>
<th>Linkages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Census</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Statistical Survey</td>
<td>+</td>
<td>- (+)</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Case study</td>
<td>++</td>
<td>-</td>
<td>++</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Administrative Statistics</td>
<td>++</td>
<td>++</td>
<td>-</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>(Current)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Village Register</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

- : fair  + : good  + + : very good

on a specific objective within a precisely defined field of analysis, all articulated as far as timing and location are concerned by duration and level of representativity, respectively, and together putting into effect a strategy of appropriate techniques. A well-devised information system should result in the establishment of an ongoing mechanism of dovetailing, or interacting, surveys (Winter, 1978; Verneuil and Winter, 1978) (see Figure 5).
Figure 5  Example of an Information System: The Different Investigatory Methods and How They Interact

Regular monitoring of prices

Centralization of existing data on "socially accepted standards" (continuing)

A: In-depth urban interviews (Annual, except in year of C): by social category, region

B: In-depth rural interviews (every five years, one year prior to D): by social category, region

C: Urban consumer survey (every five years):
- checking (interview method) of 99 headings;
- frequent expenditure on miscellaneous products (per item);
- seasonal variations;
- consumption of goods, services obtained from informal sector;
- criteria for differentiation of households.

D: Rural consumer survey (every five years, one region per year): same as for C.

Compilation of data on characteristics and mode of functioning of rural world (regional):
- existing census and survey data;
- setting up of village data base;
- analyses of case and project studies;
- choice of typical village (identification, social categories);
- methods, naming conventions;
- data on work/farm income/consumer spending interactions.

Objective
Cost of living

Objective
National Accounts

Minimum standard diet:
- average consumption of usual foods;
- changing cost of standard diet.

Data required for evaluation of nutritional problems
3. **Analysis of the Information Collected**

Once data have been collected, they must be analyzed before findings can be presented to economic policymakers. Two steps are indispensable: processing of the data and analysis of the results.

**Data Processing**

Processing of the data entails moving from the sample to the universe by extrapolation, and moving from a microeconomic observation level to macroeconomic analysis by aggregation.

**From Sample to Universe**

The passage from sample to population raises the question of the problem of extrapolation. The procedures utilized by statisticians differ from those used by researchers in the social sciences, which are based on generalization.

It is a major problem because, unlike the methods of general coverage, which touch all the individuals in the population, every other investigatory method is confined to small samples.

One must know to what degree the results collected from a sample are transposable to the level of the universe, generally the national level. According to statistical sampling theory, provided the fundamental rules of random sampling and representativity are observed, the researcher may extrapolate from sample results to the universe. This principle holds good whether the data are qualitative or quantitative in nature.

Difficulties arise, however, when extrapolation is not possible. This is the case with case studies which treat small samples whose population of reference is not known (Couty and Winter, 1983), or with purposive surveys (Ancy, 1984) where methods other than the quota sampling are used (Surgers and Verneuil, 1978).

If their findings are to be useful, social sciences researchers must be able to generalize to groups of equivalent individuals. This means making assumptions about behaviors that are revealed in the sample. The procedure employed is that of immediate induction, which needs to be distinguished from the amplificatory induction (or extrapolation) employed by statisticians. Immediate induction enables modes of organization, mechanisms, and historical factors to be identified on the basis of only a small number of findings. The researcher is more interested in the existence of the structural relations which form the model than in their measurement. The sole problem is the lack of an objective criterion by which to assess the quality of this generalization.

Generalization can be applied easily to qualitative phenomena, since the mere existence of a phenomenon, or of an interrelation between two phenomena, is sufficient. And this is all the truer when purposive sampling assures that all types of behavior are represented in the sample. As a rule, the findings obtained will be enough to satisfy economic policymakers who are more interested to know whether certain behaviors are present than to be informed of their quantitative importance (Ancy, 1984).

**From Data Collected to Data Analyzed**

The passage from collection to analysis is not clear-cut wherever the body of data compiled is large and has been collected on several levels of observation.

Information is always collected at a macroeconomic level, more often than not also a decision level—for instance, if the respondents are individuals, households, farms, groups who eat together, budgetary groups, and so on. The information becomes macroeconomic only by aggregation.

What economic policymakers need is aggregated data, since the majority of their decisions are taken at the macroeconomic level, even if their impact is felt at the microeconomic level. The problem, then, is to move from the microeconomic level observed to a macroeconomic level where the information is analyzed. This means that the decision levels observed must be reverted to (Ancy, 1975b) and the units of observation distinguished from the units utilized for analysis (called “units of analysis”).

It is from the statistical unit observed that the major items of information are collected: for instance, the
“farm plot” serves as the measure of surface area. The statistical unit of analysis may also be observed, but it is chiefly needed for the business of analysis: for instance, “the holding” is the source of estimates of agricultural output, in the same way that “the household” allows calculations of income to be made. It is therefore necessary that the definitions of both units of observation and units of analysis be perfectly clear (Gastellu, 1978).

Relationships exist between units of observation and units of analysis, since certain units are included within others: for instance, the holding may consist of several fields which themselves consist of various plots. Similarly, the household includes various individuals who consume a range of products. These relationships require aggregations of value, in a bottom-up direction when farm output is being calculated on the basis of production on each plot, or assignments of value, in a top-down direction when holding characteristics are being assigned to each plot. In practical terms, these relationships are expressed through calculation procedures that combine totals and weightings in subsamples of observations. The form they take depends on the investigatory method employed, the objectives targeted, and the environment studied.

It is thus apparent that levels of decision, observation, and analysis are closely connected. These connections create an information structure which is also a decision structure, since it allows objectives to be taken into account and facilitates questionnaire design, data processing, and measurement of the effects of decisions on behavior. This structure is a practical tool for seeing how a decision taken at a macroeconomic level translates into modifications of behavior at a microeconomic level.

Process of Microeconomic Analysis

Microeconomic analysis aims, in the first instance, at understanding behaviors, whether of individuals, household members, or households as consumption, production, or trading units.

Generally speaking, the process of analysis consists of several stages: initially, descriptive analysis studies the distributions of variables, while economic analysis introduces causality between the variables showing the most important relationships. It therefore makes use of economic theory. It also enables econometric models of behavior to be adjusted (when certain hypotheses are used).

Qualitative data obtained via sociological or anthropological approaches fit perfectly into the analytical process by providing observational justifications for the introduction of causality. It is easy to establish cause-and-effect relationships between certain variables when the corresponding behaviors are observed and described in detail in case studies or socio-economic surveys, and it is then no longer necessary to rely solely on economic theory, but rather to envisage validation through observation.

Similarly, descriptive analysis may be supplemented by factorial methods of analysis (correspondences analysis, main component analysis), these methods allowing graphic representations of the multi-dimensional relationships existing among variables (Baris and Couty, 1981).

Methods of social categorization, by constructing typologies, provide qualitative variables representative of the different population categories. They accordingly allow meso-economic analyses, which are useful in measuring the impact of development actions on certain target groups (Hallu, 1978; Surgers and Verneuil, 1978).
4. Conclusion

Now that the AMIRA Group has been publishing statistical research for 15 years, it seems fitting that a summary of these materials should be presented in a single document. Undoubtedly, the evolution of the group's ideas over that period makes this a difficult task, not least because it multiplies the risks of arbitrary treatment. However, more than a summary, this paper gives a comprehensive retrospective view and endeavors to highlight a number of main themes which link up most of the ideas examined in AMIRA publications.

The group set itself the objective of seeking investigatory methods more in keeping with the socioeconomic reality of developing countries, and thereby to help in the selection of effective development policies. The first requirement, then, was to reflect not only on the types of information official entities require if they are to reach appropriate decisions, but also on the investigatory methods that enable this information to be collected. Conventional methods such as censuses and quantitative surveys very soon came to be regarded as inadequate in capturing the behaviors of economic agents and the transformation processes societies go through in the course of their development.

This made it indispensable to seek other investigatory methods better geared toward the comprehensive understanding of developing societies and their evolution, a process entailing innovations in the conceptual underpinnings of the task of investigation, in data collection methods, and in methods of analyzing results, all in the cause of fuller knowledge of the economic reality of these societies.

Such knowledge, predominantly qualitative, could be provided by anthropologists, sociologists, geographers and historians, and would supplement the predominantly quantitative knowledge obtainable from economists, planners and statisticians. The innovations proposed by the AMIRA Group spring from the synthesis of these two modes of thought.

Since the qualitative mode provides an analytical approach to the socioeconomic reality and the factors that explain development processes, particularly decision-making and social differentiation, it supplements the quantitative mode, which focuses more on the measurement of economic phenomena.

In terms of investigatory methods, the main sources of qualitative data are case studies, village registers, and remote sensing, while corresponding analytical tools are levels-objectives matrices, budgetary flow matrices, and methods of factor analysis.

By combining various investigatory methods, adequate information systems that reflect the socioeconomic reality of developing countries can be constructed. In the practical realm, this is the approach that has been followed in monitoring food policies and analyzing the informal sector, and it is also an appropriate approach to monitoring the social impact of development programs and structural adjustment policies.

The AMIRA Group has published numerous articles and papers since 1975. Each of these publications constitutes one facet of the many-sided debate provoked by the group's thought, but since some of them appear to be more relevant than others to an understanding of the development of that thought, abstracts of them have been annexed to this paper. These contain the key ideas which, in maturing over the years, have provided the subject matter of the principal innovations examined in this paper.
Annex 1. Synthesis of Major Themes in Methodological Innovation

Information Requirements and Survey Objectives

1. It is always necessary to establish a close link between the information needed and the objectives of the investigation exercise. This in turn requires that a suitable line of economic reasoning be developed.

2. There is always an implicit conceptual reference framework supporting such reasoning: the economic transition of developing societies, and systems analysis, are new elements in this scaffolding.

3. Both information requirements and objectives should be broken out by field of analysis and by type of objective. They should also be ranked and classified in order of priority.

Macroeconomic and Microeconomic Focuses

4. The macroeconomic focus is insufficient in itself to ensure that development plans will be effective.

5. Systems analysis should enable a link to be established between the microeconomic behavior of agents and the macroeconomic stance of the planner.

Quantitative and Qualitative Approaches

6. The qualitative approach is indispensable to the understanding of socioeconomic reality, the characterization of statistical units and social categories, and the understanding of societal behaviors and transformations.

7. The qualitative and the quantitative must be integrated in the methods of statistical investigation and economic analysis employed.

Investigatory Methods

8. The conventional investigatory methods—censuses, broad surveys, quantitative surveys—can give no more than a limited understanding of the phenomena examined.

9. Other methods can be proposed which incorporate the qualitative aspect of the phenomena under study: case studies, descriptive sampling surveys, and village registers.

Rapid Surveys

10. Rapid surveys provide a way of introducing qualitative concerns (for instance, the descriptive sampling survey).

11. Specific statistical techniques can be associated with rapid surveys (e.g. purposive sampling, and so on).

Survey Strategy

12. The strategy for a survey is a function of its objectives (microeconomic or macroeconomic) and grows out of the technical choices made in connection with each operation in the survey process.

Information Systems

13. An information system results from combination—as regards both timing and site selection—of the various investigatory methods employed.

14. Permanent information systems are indispensable if the changes in societies in transition are to be monitored.

Units of Observation and Decision Levels

15. Characterization of statistical units requires integration of the qualitative and quantitative approaches.

16. Statistical units, their objective functions, and the corresponding decision levels are closely related.

17. Relationships exist between units of analysis and units of observation.

Social Categories

18. Social categories must be taken into account if the processes which characterize the evolution of a society are to be understood.
19. Social categories provide stratification criteria for statistical investigation.

20. Various methods of social categorization are available, especially those based on case studies, descriptive sampling surveys, and village registers.

Statistical Tools

21. Techniques enable statistical units to be identified in terms of their objectives and economic functions: the decision levels-objectives matrix.

22. The budgetary flows matrix enables the budgetary flows within a statistical unit to be analyzed.

23. Methods of factorial analysis pinpoint the variables that explain a process.
Annex 2. Glossary of Technical Terms

This glossary provides definitions of some technical terms which are used in this paper. It will ensure a close correspondence between the French and the English terminology.

Information Needs

This refers to the demand for information expressed by the decision-makers, planners or other users, who need data describing or explaining the economic reality on which they are working.

Economic Reasoning

Economic reasoning is a process by which information needs expressed by the decision-makers are transformed into analytical survey objectives. To design these objectives one has to refer to economic theory. This is a fundamental step towards the establishment of the dialogue between users and producers of information. Through it both partners are able to discover each other's rationale and constraints.

Field of Analysis

For analytical reasons, the socioeconomic reality is broken down into different thematic domains. Each corresponds to a possible field of analysis (for instance income, food, employment, education, health, and so on) related to specific analytical objectives. Different units of observation, variables and socioeconomic characteristics are related to each of these fields.

Socioeconomic Reality

This general term aims at presenting the context of developing countries as an integrated whole that encompasses social and economic features. It facilitates consideration of the developing country context as a subject for observation or analysis.

Interactive System Analysis

This is an analytical method which considers the socioeconomic reality as an integrated whole from which certain variables and certain decision centers are not arbitrarily isolated. This reality is permanently evolving and understanding its dynamics requires the study of all components.

Village Register

A village register is a system for continuous observation which covers the entire country and contains data for which the primary statistical unit is the village.

Decision Level

The socioeconomic reality is generated by actors who have objectives and take decisions in order to achieve them. Their decisions are not all of equal worth, since some actors automatically take precedence over others. This generates a structure with different levels of decision.

Case Study

Case studies are essentially qualitative surveys, based on small samples of statistical units selected carefully. Their objective is to give a precise and detailed picture, and explanation of the way the society is functioning and changing.

Descriptive Sampling Survey

Descriptive sampling surveys are rapid surveys of large samples representative of the population. They are used to estimate the sizes of the social categories within the population identified by the case studies.

Baseline Survey

Baseline surveys are used to assess the economic situation. They give aggregated data and indicators describing the situation without trying to explain it.
multi-topic surveys they collect information on several subjects related to the socioeconomic living conditions of households.

**Survey Strategy**

The survey strategy is defined by the combination of technical choices which are made during the different stages of the design and implementation of the survey (data structuring, sample design, observation methods, drawing up of the questionnaire, recruitment of the personnel, data processing, and analysis).

**Rapid Survey**

This type of survey aims at producing good quality results in short periods of time and, typically, at low cost. Therefore its objectives are limited, simple survey methods are used and a limited amount of resources are required for its implementation.

**Large-scale Survey**

Contrasting with the rapid survey, the large-scale survey requires more sophisticated statistical techniques and a greater amount of resources for implementation. It is therefore a relatively costly and time-consuming undertaking.

**Information System**

An information system is the combination of different investigatory methods, each focused on a specific objective within a precisely defined field of analysis, all articulated as far as timing and location are concerned by duration and representativity.

**Unit of Analysis**

The unit of analysis is a statistical unit, which may or may not be observable, and which is defined strictly for the purposes of the analysis. Examples include the household, the holding, the person, and so on.

**Unit of Observation**

This is the basic unit which can be observed. It is an element of a wider set (for example an individual in a population) to which characteristics are attributed, observed, and recorded.
Annex 3. Abstracts of Major AMIRA Papers

The following pages contain abstracts of major innovative AMIRA papers. This list provides the reader with titles of papers which can be obtained by writing the AMIRA group in Paris at the following address: Groupe AMIRA, INSEE - bureau 906, 18 bd Adolphe Pinard, 75675 Paris, Cedex 14, FRANCE.

2. Ancey, Gérard. April 1975. - Decision Levels and Objectives Function in Rural Africa
6. Ancey, Gérard. July 1975. - The Serer People, or Defense and Exposition of a Method of Analysis
12. Winter, Gérard. 1978. - Reflections on Multipurpose Household Surveys in Developing Countries
15. Gastellu, J.M. 1978. - Where Exactly Are the Economic Units We All Seek in Africa?
Abstract

This article, which demonstrates the need for change in current investigatory practices, begins by describing the planner's position and then goes on to examine questions and criticisms surrounding it.

The planner studies and implements productive projects. He evaluates their impact at the national level by using the national accounting system, but ignores changes in behaviors at the microeconomic level.

Practiced in this way, planning is concerned exclusively with increasing productivity and organizing the growth of commercial production. As a rule, income distribution is not taken into account in most instances, often for lack of information. All the same, the planner does not see his attitude as implicitly associated with a particular economic rationale.

The planner's primary need is therefore for national accounts data and for project data presented in the same categories used in the national accounting system. If this information is to be forthcoming, there must be periodic statistical surveys covering the entire country.

A problem arises because the national accounts deal mainly with the modern sector, whereas the existence of a large informal sector tends to falsify the picture thus obtained of the economy.

Moreover, if the planner is to be able to evaluate the real impact of projects, he must have access to more thorough knowledge of the environments affected by them. This means constructing a new conceptual and accounting framework that reveals the changing patterns in the society and incorporates other investigatory methods besides baseline surveys.

In collecting data, therefore, it must be possible to distinguish the measurement of macroeconomic flows from the analysis of endogenous transformations within the society. Socioeconomic surveys are the most appropriate means of doing so, since they possess elements of both the case study and the survey.

Improving investigatory methods also means developing rapid techniques of continuous data collection, prioritizing and limiting the objectives of baseline statistical surveys, conducting socioeconomic surveys, and ensuring that they dovetail with socioeconomic research.

Areas of Innovation Discussed

- Macroeconomic and microeconomic focuses
- Investigatory methods
- Information systems
Abstract

Economists concerned with Africa use a quantitative approach that is too removed from the socioeconomic reality of the region. They take the position that it is enough to examine budgetary units where the sole decision center aims to maximize profit in the form of agricultural output.

In fact, however, if the multidimensional aspect of this reality is to be captured, it is necessary to consider that such units may not have just a single decision level. For instance, the following levels might be examined: first borns, second borns, women; production, consumption, residence, and kinship groups; the village; and so on.

At each level, there are actors who take decisions in order to achieve specific objectives. The different economic functions—income, consumption, production, investment, and so on—may be associated with objectives such as marketable or subsistence production, cash income, security, leisure, prestige, authority, and so on. Decision levels and actors' objectives can be cross-tabulated on a levels-objectives matrix; besides supplementing a method of approach which provides a data collection framework, this tool generates knowledge of a society in economic transition and can be used for programming and for simulation of behaviors.

Observations

Examining decision levels and the objectives that may be associated with them provides a way of introducing the qualitative element into the analytic representation of socioeconomic reality.

However, the objectives have to be ranked in order of priority for each decision level. Some are conditional upon others: for instance, achievement of regularity of income flow is conditional, initially, upon remuneration actually being obtained.

Clearly, the question here is one of the foundations of a decision structure, which is deducible from an information structure. The mechanism that ties these levels together, can be modeled graphically.

Areas of Innovation Discussed

- Quantitative and qualitative approaches
- Units of observation and decision levels
- Statistical tools: the decision levels-objectives matrix
Abstract

Planning is presented as an act of political will based on the fundamental assumption that development implies the breaking up of old structures.

However, faulty knowledge of the rural world, the result of a lack of information on its structures, means that too many assumptions are made concerning the productivity of the small farmer, the links between food and nonfood production, the decision unit, and the quest for income.

Overall consistency is assumed without any allowance being made for such essential elements as, for instance, the informal sector, which is taken into account only to the extent it is monetized.

Area of Innovation Discussed

- Quantitative and qualitative approaches
Abstract

These articles, which deal with defining statistical units and with the rationality of households, make two major points.

Regarding the importance of statistical units and their economic function, it is noted that:

There exists an obvious unit, namely the dwelling (known as the m'bind by the Serer themselves), in which the chief has no power of decision over the organization of production, consumption, or accumulation; this is a unit with a social function.

There exists a production-consumption unit, the n'gak, consisting of one or more brothers, their wives and children; the m'bind may consist of one or more n'gak.

The accumulation function is vested in specific units, geographically scattered but linked together to form the n'dok, organized in accordance with the maternal lineage; a woman forms part of two accumulation units, the one she forms with her brothers and sisters and mother and the one she forms with her own children.

Regarding the rationality of households, it is noted that the goal of production is self-supply and the payment of taxes. The goal of accumulation is the building up firstly of a store-of-value (drawn on for major social obligations associated with marriages, deaths, baptisms, and so on), then of a reserve for contingencies, and finally of a stock of the means of production.

The investigatory method for capturing the effects of these factors is the case study, which should preferably be tied in with a system for the continuous collection of quantitative data and with a village register.

Areas of Innovation Discussed

- Units of observation and decision levels
- Investigatory methods
- Information systems
Abstract

The concepts used in analyzing socioeconomic reality—the regional subdivision, the village, the market town, the housing compound, production or budgetary units, the household, the holding, the farm plot, the crop calendar, the notion of the employed person, and so on—should be closely linked with planning objectives.

Concepts are liable to be ill-defined in three cases: where there is no view of development that accommodates the concepts; where there are too many objectives, making it difficult to formulate a concept that is able to incorporate each of them; and where there is too much conceptual orthodoxy, which hinders the process of adaption to socioeconomic reality.

The lack of such a view of development makes an approach based on synthesis impossible. It encourages the impulse toward multipurpose action and is responsible for concepts that serve both planner and anthropologist poorly. Where there are multiple objectives, concepts are inevitably more hazy, since they have to meet too many requirements simultaneously. Moreover, the employment of systematic criteria in defining them tends to shrink reality and lead to the loss of information.

Area of Innovation Discussed

- Quantitative and qualitative approaches
Abstract

Here, the decision structure presented in AMIRA No. 3 (p. 42) is applied to the Serer people of Senegal. In this case, the decision levels are: individuals (first borns, second borns, and women), production groups, accumulation unit (n'dok) based on a lineage structure, the production-consumption unit (n'gak), the ahao (consisting of several n'gak), the housing unit (m'bind), the maternal lineage (den), the district (dikh), the neighborhood (kentand), the supra-village.

The fact that these levels interact with one another creates a multiplicity of relationships (for example, between the n'gak and the n'dok) which are also complex (for example, between the n'gak and the m'bind). Since specific objectives are pursued at each decision level, Serer society can be represented by a structure in which the different decision levels interlock.

Analysis becomes dynamic if the aim is to measure the break up of structures in a society in transition. It is conducted using a systems focus targeted on the interactions among the various decision levels. For example, population pressure is modifying the relationship between n'gak (production unit) and n'dok (accumulation unit), the former encroaching on the latter. Likewise, the adoption of new farming techniques is dissolving the relationship between n'gak (production unit) and m'bind (housing unit).

Observations

This publication responds to two criticisms leveled in Article 3, namely: the static side of the structure, and the absence of interaction among the various decision levels.

The kind of graphic representation which would facilitate understanding is lacking, however.

The method proposed is clearly transposable to any analysis of a society. It should be applied systematically by sociologists and anthropologists for purposes of economic analysis.

Areas of Innovation Discussed

- Units of observation and decision levels
- Statistical tools: the decision levels-objectives matrix
Abstract

As far as its design was concerned, this survey had to accommodate objectives that differed in kind:

On the one hand, the measurement of such economic concepts as total income and consumption, by region and nationally (not including Dakar);

On the other, a more subtle analysis tracing the distribution of income and consumption within the population, using different multicriteria typologies. The search for criteria explaining differences in standard of living was an attempt to understand the functioning of exchanges among social categories.

The ensuing information collection process proved unwieldy and costly and involved complex methods. The qualitative survey in particular proved difficult to execute. Definition of qualitative characters such as forms of ownership or control or usufruct of the means of production, contractual arrangements governing nonsalaried labor and exchanges, and so on. is more part of a sociological than a statistical-economic approach; moreover, highly-qualified interviewers are essential.

Results have shown that quantitative methods (applied to a representative sample) can be “added” to qualitative methods (allowing full comprehension), without leading to an illegitimate compromise that satisfies either of the two categories of objectives.

Areas of Innovation Discussed

- Quantitative and qualitative approaches
- Investigatory methods
- Survey strategy
Abstract

The concepts of what constitutes employment and an employed individual used in conventional quantitative surveys are very imprecise. This is the case, for instance, with the regional surveys done in Côte d'Ivoire in the 1960s (Bouaké, Man, and Korhogo).

Vagueness in the naming conventions used to identify types of occupation, and failure to take account of the distribution of tasks by type of employment and by category of individual, lead to significant errors in estimation of the active labor force engaged in farming work.

Area of Innovation Discussed

- Quantitative and qualitative approaches
Abstract

Conventional methods of budget analysis are not relevant to an understanding of what occurs within a society. Based on the aggregation of income or expenditure and on the assumption that there is only a single decision center, they enable the total cost of a development project to be compared with overall savings capacity. Unfortunately, the components in the budget of a family unit cannot necessarily be aggregated. If no member of the budgetary unit has the power to centralize the flows of resources, expenditures or savings, the computed return on the project cannot be validated.

It thus becomes necessary to employ a method capable of reflecting the diversity of monetary flows and the impact of the relationships among individuals in determining these flows. This is why it is absolutely essential to record particulars of family relationships during the survey process.

The method proposed in this article relies on the budgetary flows matrix, which traces expenditure flows among the various individuals making up the household unit. It highlights the relationships of monetary dependence that may exist among these individuals, and also the links which unite individuals around the same spending objectives.

The results of this matrix analysis show that as a rule there is no totally satisfactory budgetary unit at any level. It is the monetary flows observed which make this or that individual a member of the budgetary unit. Therefore, the concept of unity of decision as the catalyst for all saving is thrown into serious doubt.

The budgetary flows matrix has the advantage of clarifying phenomena which otherwise only a sociologist familiar with the environment could at best sense, but without quantifying them.

Areas of Innovation Discussed

- Quantitative and qualitative approaches
- Units of observation and decision levels
- Statistical tools: the budgetary flows matrix
Abstract

Investigatory efforts have often led to disappointing results by generating a mass of data that can never be used. What is needed is a framework that provides a practicable way of integrating information collected, and interactive systems analysis is the tool which can make this possible.

Planning, as now practiced, is often limited, with the planner taking an exclusively macroeconomic approach; he seeks to retain the major lines of coherence followed in the national accounts and has little or no interest in disaggregating by categories of economic agent.

It thus becomes difficult to imagine innovative policies, something which depends on knowledge of the causal elements that require action and the key variables to be considered. However, this involves abandoning the broad summary approach and associating macroeconomic lines of coherence with lines of coherence established for the various social groups. By limiting his calculations to macroeconomic equilibria, the planner ignores the diversity of certain behaviors.

Improving planning methods means designing a more complete information system that will detect key variables, characterize social groups, reveal objectives, and identify aspirations.

The system approach can furnish the foundations of a method of integration which enables the user to reason while taking the complexity of socioeconomic reality into account, but without arbitrarily isolating certain variables and certain unlikely decision centers.

The choice of a systemic approach is not a neutral one. It goes hand in hand with a certain model of development: integrated, nonsectoral development that does not single out the monetary aspect alone; self-dependent development that encompasses all economic agents, and incorporates a continuous method of evaluating projects and programs that will lead to their being redesigned or modified when necessary.

The systemic approach comprises several phases: discovery of the key variables associated with the processes of development; definition of policy goals; measurement of the microeconomic effects of policy changes; and creation of scenarios through which to stimulate the macroeconomic consequences. This provides a way to ensure consistency between microeconomic behavior and basic macroeconomic equilibrium.

Identification of the key variables requires conceptual analysis of the transformations in the society, historical analysis and description of the mechanisms of development, case studies, and critical analysis of past experience. But it then still remains to find the techniques for pinpointing the various decision levels and the objectives associated with them and for settling the relevant classifications.

In the system approach, information is fundamental as an instrument of knowledge regarding changing patterns in the society and the choices of social partners. It consists in bringing all data together into a whole while reflecting the dynamic interdependence of the behaviors of decision centers. Various investigatory methods can be used to this end.

Areas of Innovation Discussed

- Quantitative and qualitative approaches
- Macroeconomic and microeconomic focuses
- Investigatory methods
Abstract

Roughly 50 household surveys on the standards of living in francophone Africa were conducted between 1955 and 1975, and naturally reflect that particular historical period. Current development needs, however, call for new types of surveys more concerned with understanding economic structures and agent behaviors.

Their fields of investigation were very diverse: urban or rural groups, regional or national coverage, exclusion of certain social categories; and their objectives also: budget, nutrition, home consumption prices, durable goods, housing, transportation, time-use, etc.

Conducted for the most part on the initiative of Ministries of Planning, they were intended to generate data for the national accounts, and so the concepts, definitions, naming conventions and methodological logic employed were very much those of the national accounting systems.

Something they failed to do, however, was to capture socioeconomic reality in all its complexity or elucidate the rationale behind societal transformations—indispensable if there is to be effective intervention in the development process.

Their conceptual underpinnings were arguable: economic progress, development, and improvements in living standards were linked only to increased commercial production; they ignored the problem of the parallel evolution of social structures, since they captured social differentiations no more than dimly.

A significant degree of compartmentalization between one professional discipline and another prevented sociological and anthropological factors from being included in survey design and analysis.

Certain concepts employed in these surveys now need to be extended: identification of economic agents, for instance, or recognition of the existence of different decision levels (so that the mere budgetary unit is not treated as if it were the entire household).

Household differentiation criteria should also be reviewed. As a rule, attention was centered on expenditure or income level, occupational category, or household size; at the same time, however, the economic characteristics of the village and of the productive activity of the household were rarely taken into consideration.

What is now needed is an investigatory mechanism which gives a better understanding of socioeconomic structures and behaviors and the logic animating them, and which allows the transformations affecting them to be monitored. Henceforward, surveys need to be more accurate and to take account of the key decision levels.

Areas of Innovation Discussed

- Quantitative and qualitative approaches
- Investigatory methods
Abstract

The objectives pursued and the methods and mechanisms employed in conducting surveys of this type are the focus of this publication.

Too often, survey objectives are not clearly defined, and the result is conspicuous underutilization of the findings generated. There is a tendency to ignore the real needs of users and to produce figures for their own sake. Greater selectiveness in terms of user needs is required, but depends on the adoption of more effective survey methods. Generally speaking, if objectives are well defined, they point to a specific investigatory method, whereas the attempt to incorporate too many objectives leads to questionable compromises.

Surveys with macroeconomic objectives, which measure progress at the national level, are to be distinguished from surveys with micro-socioeconomic objectives, which assess the impact of specific actions.

So far, no one has proposed a satisfactory methodology of survey design and execution, mainly because of the complexity of the developing economies. What is necessary, then, is an effort of research, adaptation of concepts, and rethinking of techniques.

However, there is no reason why continuous household survey mechanisms should not be set up which combine (in terms of both timing and site selection) surveys with macroeconomic objectives and surveys with micro-socioeconomic objectives.

Areas of Innovation Discussed

- Information needs and survey objectives
- Macroeconomic and microeconomic focuses
- Survey strategy
- Information systems
Abstract

A village register is a permanent system of observation which covers an entire country and assembles information for which the basic statistical unit is the village.

It is one of the investigatory methods, which has its place in an information system that incorporates census, statistical survey, case study, current administrative statistics, and descriptive sampling survey.

It is an assembly of specific resources and requires the setting up of specific work structures that link up the main administrative agencies. It provides an inventory of population groups, employment, infrastructure, and natural resources, and therefore serves as a basis for the formulation of regional development policies. In addition, it facilitates dialogue among the practitioners of such different disciplines as economics, demographics, sociology, and anthropology.

It can be used as a sampling universe in order to improve the quality of surveys, by providing appropriate stratification criteria or village typologies.

The setting up of a village register requires that the entity "village" be clearly defined, and that it be clearly established what data are to be collected and what data must be brought up to date regularly.

The village register is different from the simple directory of villages. The latter is merely an enumeration of villages while the former also contains the wherewithal for qualitative analysis, since it provides stratification criteria and reflects the influence of the village statistical unit on household behaviors. In this sense, village registers are a new investigatory tool or method.

Areas of Innovation Discussed

* Qualitative and quantitative approaches
* Investigatory methods
Abstract

- Four factors will be of concern when an information system is being set up: precise identification of objectives, quest for a continuous mechanism of rapid surveys, reliance on information already to hand, and trimming down of direct surveys of households.

In the identification of objectives, a distinction can be drawn, for instance, between national accounting system objectives, which are macroeconomic, and income distribution objectives, which are microeconomic.

It is clearly better to put together a coordinated ensemble of specific investigatory methods well tailored to each objective than to undertake occasional large-scale nationwide surveys with multiple objectives.

The program of investigation should begin with the simplest and most frequently repeated operations (those which have to do with the price index, for instance) and finish with the most complicated and least frequent (surveys of behaviors, for instance).

The various investigatory methods employed—collection of administrative data, household surveys, monitoring of market prices—need to be well articulated with one another, since this makes sampling much more rational as far as both timing and site selection are concerned.

A simple example of such a system, designed for Cameroon, is suitable for replication in any other country, although an essential preliminary would be a thorough knowledge of the country and the statistical tools it is accustomed to using.

Areas of Innovation Discussed

- Information needs and survey objectives
- Investigatory methods
- Information systems
Abstract

In any society, three basic economic functions can be distinguished: production, consumption, and distribution. It is also clear there are different levels of decision-making: individuals, the production unit, the residence unit, the kinship group.

As far as identifying production, consumption and accumulation units in the field is concerned, the author proposes a method developed during his work among the Serer people of Senegal and the Agni of Côte d'Ivoire; it consists of identifying the key decision center, finding confirmation of the existence of this community in the vernacular vocabulary, and studying the relationships among individuals.

The residence community poses less of a problem, since it has no economic function among the Agni and the Serer, and is moreover easily identifiable. The author proposes a qualitative questionnaire, supplemented by a census. The questionnaire pinpoints decision centers within the residence community, identifies production, consumption and accumulation teams and allows their composition to be studied.

Still the indispensable base of any survey in the social sciences arena, the census alone enables individuals to be identified in terms of their links of kinship or alliance with or dependence on the leader of the (production, consumption or accumulation) community and to be distributed according to their sex, age, ethnic group, religion, or main employment.

Areas of Innovation Discussed

- Units of observation and decision levels
- Information systems
Abstract

As the results of qualitative research by specialists in the social sciences have placed statisticians in a position to make better technical choices, it becomes possible to merge the different techniques used by researchers and statisticians.

The techniques in question are subdivisions and groupings, sampling (difference between random and purposive methods), extrapolation or generalization, and linking timing (or history) and location (or geography).

In surveys on the standard of living surveys, for instance, they may be used to identify the units to be targeted: definition of consumption groups and budgetary groups, for instance. Where meal groups are concerned, difficulties arise because of the way polygamy affects cooking styles, of exchanges of dishes, and of changes in group membership. With budgetary groups, difficulties arise because of the existence of various decision levels and groupings which function simultaneously.

Area of Innovation Discussed

- Quantitative and qualitative approaches
Abstract

Review of the planning procedures used in French-speaking Africa leads to the conclusion that methods have hardly changed since the period of accessions to independence. A critical appraisal of planning methods is therefore a logical preliminary to drafting of any development plan that is going to be not only realistic but likely to facilitate and elicit appropriate decisions.

Such a plan is a rational ensemble of objectives and resources based on a stocktaking of the particular country’s potentialities; it also allows for existing technical and social constraints, and seeks the lowest cost methods of achieving the general aims laid down by policymakers.

Framing of a plan proceeds in three stages: formulation of an overall development strategy, determination of sector objectives and specific policies, and selection of the projects through which those objectives are to be attained.

The “big-picture” attitude taken by the planner remains inadequate as long as it does not also incorporate microeconomic-level knowledge of the conditions surrounding the implementation of development actions.

A problem is created here by the difficulty of moving from microeconomic levels to the macroeconomic level. Several dialectical processes are in operation: qualitative vs. quantitative, short term vs. long term, microeconomic vs. macroeconomic, and so on. Planning becomes integrated once all these elements are incorporated within an iterative process.

The earliest plans showed a macroeconomic bias, since their predominant goal was to increase monetary Gross National Product by fostering development of the modern sector—the assumption being that the effects of development would spread automatically into all the social strata.

Almost universally, these plans failed: wide gaps between actual and estimated achievements, numerous stalemates, the adverse effects of growth (rural exodus, environmental deterioration, impoverishment of certain social classes, and so on). Such failure was the outcome of oversimplification of the manner in which societies and their decisionmaking processes function. The remedy is more thorough knowledge of the relationship between microeconomic and macroeconomic, to be obtained by examining the systems underlying the rural world and taking the conditions surrounding household life into account.

Areas of Innovation Discussed

- Information needs and survey objectives
- Macroeconomic and microeconomic focuses
- Information systems
Abstract

The concept of the distribution channel can be worked into the methods used for the observation of agricultural commerce in Africa. Such an approach is a microeconomic and qualitative one, and is in contrast to the more widely used focus on production/distribution chains, which is macroeconomic and quantitative; since it reasons in terms of localized systems, it embraces the concepts of timing and site selection.

The distribution or marketing channel enables the cost and productivity of the services it provides to be measured. This means examining the link between prices and producer behavior, the effects of prices on social differentiation, and the links between prices and the phenomenon of accumulation.

Price statistics can be obtained through surveys: of points of sale, of producers, of consumers (habits, preferences, and affordability). Even when prices are fixed by mandate, there is generally a parallel market.

The study of prices includes qualitative analysis to reveal the variables which explain their level. Use can be made of methods which analyze either key components or correspondences. Generally speaking, the variables are the following: market size, geographic location, recording date, volume sold, product quality, and buyers.

This article demonstrates how little point there is, as far as analyses of marketing channels are concerned, in recording very detailed prices based on random market samplings.

Areas of Innovation Discussed

- Quantitative and qualitative approaches
- Analytical tools: factorial methods of data analysis
Abstract

Two Irreducible but Complementary Investigatory Methods

Two different approaches to capturing the socioeconomic reality of developing countries can be distinguished: that taken by social science researchers and that taken by statisticians.

Statistics form the basis of the process of extrapolation of data, on the hypothesis that reality can be broken out into simple components. The essential criterion is that of similitude or homogeneity, as used in mathematical statistics or sampling theory. It means that no more than a small number of subjects need be observed and that the observations made can be extrapolated to the universe.

The social sciences throw light on the modes of functioning of complex social entities, and they reconstruct multiform reality into a coherent whole. It is this coherence which validates the process of generalization.

It may be said that the social sciences employ a systems approach, and statistics an analytic approach. One seeks out the specific as sign of complexity and source of coherence, while the other seeks out the homogeneous as sign of similarity and source of extrapolation. The social science researcher defines units and concepts, principles of categorization, modes of functioning and transition, while the statistician studies the extension of those units, the relevance of typologies, and the validity of those mechanisms.

The two extremes of the investigatory process are the case study and the statistical survey. In order to get beyond the differences between them, the proposal is put forward that socioeconomic surveys be designed and information systems promoted in which each mode of investigation validates the other.

There is no question here of setting the quantitative and the qualitative at odds; in statistics, the dividing line between discrete quantitative variable and qualitative variable is already very hazy.

Statistics is the science of distributions. The key concept is that of representativity and not that of measurement. It is this representativity which justifies extrapolation and enables it to arrive at a global measurement through aggregation.

The concept of representativity should also serve as the pivot for the principle of generalization attributed to the localized and time-specific works of researchers in the social sciences.

Thus every information system should have a two-fold foundation: a qualitative, synthesizing diagnosis of the structure and evolution of the environment under examination; and statistical coverage obtained from censuses, data bases and aerial surveillance. An information system cannot do without in-depth surveys of the statistical type to measure flows (household expenditures) and of the socioeconomic type to describe behaviors. However, in order to establish a link between statistical coverage and large-scale surveys, it would be necessary to use descriptive sampling surveys to enumerate the numbers of individuals in the various categories of analysis.

Production Systems and Relationships

Regional analysis provides a good example of the complementary nature of qualitative and quantitative investigatory methods.

In this case, the essence of the procedure is to move from the concept of structure to that of system—in other words, from area case study to production system. Only analysis in terms of production system reveals the processes of extension or intensification of crop growing activity from which rise the concepts of yield and work productivity.

An examination of case studies shows that ethnic groups are not a relevant criterion of stratification, since they are not homogeneous enough. They are continually forming and breaking up, and studying them requires historical analysis. It is better to look for stratification criteria at the intra-ethnic group level.

There are three components to regional analysis: an exhaustive geographic inventory, a series of investigations on small rural districts (area case studies), and more topic-oriented research exercises (e.g. population categories, migrations, fishery, and so on). The purpose of the analysis is to decipher the functioning of the system rather than to measure flows. However, this type of procedure supplements statistical inventories, which are principally occupied with establishing averages.

Observation of qualities and enumeration of quantities are the two components of a single procedure where the qualitative study of phenomena necessarily precedes their quantitative study.

Areas of Innovation Discussed

- Quantitative and qualitative approaches
- Investigatory methods
- Information systems

* Institut français de recherche scientifique pour le développement en coopération, Paris.
Abstract

Quantitative surveys, which are “extensive” since they rely on representativity and extrapolation, can be contrasted with qualitative surveys, which are “monographic” or “revealing” because they seek to comprehend behaviors.

It is possible to design rapid surveys, but this requires that appropriate statistical methods be chosen: small sample, purposive sampling, more in-depth observation to reduce observation error, generalization of results rather than extrapolation, and so on.

Rapid surveys have the advantage of being easily analyzed and allowing more effective verification of results. Errors of observation can thus be avoided, so that the sampling errors associated with the purposive technique can be offset.

While the results do not allow extrapolation, the qualitative focus is more intent on detecting the presence of a phenomenon than on measuring it; and they are sufficient to allow generalization and to be utilized by economic policymakers.

Qualitative rapid surveys also bring out the causality behind the phenomena of interest, indispensable in the analysis of quantitative survey data. It is therefore sufficient to have reciprocal validating links between qualitative and quantitative surveys within information systems that combine these two investigatory methods. It should be noted, nevertheless, that information obtained through a case study enables macro-data to be constructed, whereas the macro-data obtained through a quantitative survey cannot be disaggregated easily.

Areas of Innovation Discussed

- Quantitative and qualitative approaches
- Rapid surveys
- Survey strategy
- Investigatory methods
- Information systems
Abstract

Using case studies to illustrate its thesis, this work discusses the difficulty encountered in accomplishing different objectives that require specific investigatory methods.

Two objectives are proposed: a demographic and therefore essentially quantitative objective and an anthropological and therefore essentially qualitative objective. Pursuit of both of these through a single survey forces compromises when it comes to technical choices (definition of the household, sample size, questionnaires, survey methods, type of tabulations, and so on). Each objective calls for certain techniques peculiar to itself. These divergences between the demographic and anthropological approaches increase the risks that the survey will fail.

As a secondary theme, this work contrasts two approaches: the qualitative approach, which would tend to emphasize microeconomic behaviors and anthropological and sociological considerations, and the quantitative approach, which would rely essentially on macroeconomic aggregates, statistics and demographics for the analysis of socioeconomic phenomena.

Areas of Innovation Discussed

- Quantitative and qualitative approaches
- Investigatory methods
- Survey strategy
Abstract

In this study of the statistical approach favored in modern-day India, the author examines the contrast between the qualitative approach taken by anthropologists and sociologists who produce case studies and that taken by economists who make overall analyses without possessing any real field knowledge.

The “mystique of the development plan” requires a large body of data to be produced but at the same time isolates statisticians and economists from the real world. The least reliable and least useful figures are those of the overall or summary type, since they are unable to trace economic behaviors in detail.

If socioeconomic reality is to be captured better, concepts must be harmonized, the role of the individual and the impact of local relationships understood, and the important informal sector studied (meaning that methods of social categorization must be developed to reflect the particulars of this sector more adequately).

Interestingly enough, this work demonstrates that in India, which has the most experience in statistical surveys, the problems dealt with throughout the series of AMIRA publications make themselves felt in a particularly pressing manner.

Areas of Innovation Discussed

- Quantitative and qualitative approaches
- Social categories
Abstract

Until the 1960s, household surveys in Africa were geared to the requirements of the planning authorities and the national accounting system. Their objectives were to draw up inventories and to estimate volumes of consumption or production for the whole population. The sampling process was designed to be representative of the population under examination.

During the 1970s, a combination of the demands of development and the limits of state planning began to steer the investigation process toward comparison of consumption and income levels among population groups.

With the confirmation of differences comes the need to explain what causes them. This means classifying statistical units (here, the household or family/unit of consumption) according to characteristics that are explanatory of those levels. At this point, two problems arise:

(i) Since the most pertinent characteristics are generally revealed by survey, how does one choose a population sample according to characteristics not identifiable a priori? The answer lies in selecting characteristics which are identifiable a priori and which correlate well with those one wishes to examine.

(ii) How does one obtain sufficiently significant data on long-lasting phenomena and how are units/families classified according to the level of observed flows associated with the explanatory characteristics? These problems can be overcome by lengthening the period of observation to match the slowest cycles of the phenomena observed in each statistical unit.

Observation over the long term has a twofold aim:

- to obtain data representative of the whole period for each family and thus allow its classification by level;
- to reduce the effect of nonsampling errors by cross-checking declarations made in surveys conducted at different points in time.

However, to avoid cost increases, sample size needs to be reduced.

It appears that success in reducing the effects of nonsampling errors, generally much greater than sampling errors, does more than offset the loss of precision associated with a smaller sample.

Therefore, sampling techniques depend on the objectives of the survey.

Similarly, the demarcation of family units, based on criteria of residence and kinship, varies according to the spectrum of activities under consideration. The long absence of one family member, for instance, affects expenditure on food but not expenditure on clothing or accommodation.

Definition of consumption and method of accounting vary depending on the aim of the study. If the intention is to construct a price index, the structure of consumption will be deciphered by posting purchases at market price. If standards of living are the subject of interest, the cost of utilizing products and services over the period of observation will be estimated by putting a value on noncash exchanges (received) and self-supply (in-household consumption).

Quantities consumed can be valued by applying prices that vary over time and from area to area (market prices), which constitutes a plutocratic weighting; or they can be valued by applying a sole average price weighted for the size of the population, which constitutes a democratic weighting, better suited to the comparison of standards of living among social groups.

Thus, at each stage of the survey, from its design up to analysis of the results, those statistical techniques are selected which are best adapted to the objectives and aim of the study.

Areas of Innovation Discussed

- Information needs and survey objectives
- Survey strategy
- Investigatory and sampling methods
- Qualitative and quantitative approaches
The ideas presented in this work are taken from the following publications, whose authors are members of the AMIRA Group.


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<td>Grootaert and Kanbur, <em>Policy-Oriented Analysis of Poverty and the Social Dimensions of Structural Adjustment: A Methodology and Proposed Application to Côte d'Ivoire, 1985-88</em> (also available in French)</td>
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<td>Alderman, <em>Nutritional Status in Ghana and its Determinants</em></td>
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