

# *A guide to* **NUTRITIONAL ASSESSMENT**

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and BRUNO DUJARDIN



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# A GUIDE TO NUTRITIONAL ASSESSMENT

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# PREFACE

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This guide is aimed primarily at professional health workers who, although not necessarily specialists in nutrition, often have to make decisions or advise decision-makers on the nature of, and choice among, interventions to combat malnutrition, and also as to the selection of target groups and location, etc. These health workers also formulate, or advise on the formulation of, nutrition policies.

It is a guide and not a manual, in the sense that it does not give precise instructions on how to proceed, but offers broad guidelines, illustrated with examples, on the appraisal of the nutritional status of population groups and the selection of priority areas or groups for action. It suggests ways of assessing policy objectives or deciding on the basis for nutritional surveillance, and of monitoring and evaluating interventions. It recommends a sequence of steps that are generally the most appropriate, but may be adapted to a wide variety of situations and objectives.

The guide explicitly acknowledges that, since it must be accepted as a fact of life that time, funds, and qualified personnel are invariably restricted, it is preferable to assess nutritional status on the basis of existing data rather than generate new data through surveys or special studies.

The guide can be used for nutritional assessment at the national, regional, district or project level, and within a given sector at any one of these levels. While it is not intended for use in very small communities, much of it will nevertheless be applicable to specific situations in such communities.

Nutritional assessment, as it is understood here, is justified only when taken as a preliminary step to further action. Therefore the study of the nutritional status of a population or of selected groups for other purposes (such as research, validation of indicators, confirmation of suspected problems, etc.) is not covered in this manual. In other words, a nutritional assessment as described here is necessarily a step in a planning process. It cannot be made in isolation from either decisions previously made about future action or the subsequent steps in the planning cycle.

While this guide is addressed mainly to the health sector, it does have broader applications. It will be useful not only to health workers, but also to officers in planning ministries or commissions and the nutritionists who advise them, as well as to managers of development programmes and projects. In addition, it can and should be used to

strengthen the ability of the users in assessing nutrition and, more generally, in achieving a clearer understanding of nutrition problems: their causes, their implications, and possible solutions.

The authors have drawn heavily on their own field experience, as well as on the experience of others who offered suggestions and criticism. Special thanks are due to Alberto Pradilla, Chief, Nutrition Unit, World Health Organization, who in the mid-1970s was a pioneer in the development of assessment procedures; to Christiane Dricot d'Ans and Jean Dricot, Hanoi, Viet Nam; to Carlos Montoya, Division of Strengthening of Health Services, WHO, and lastly to the members of the Nutrition Unit at WHO Headquarters, for their substantial contribution both to the concepts underlying the guide and to the methodology it presents.



# INTRODUCTION

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To formulate policies or choose appropriate interventions for combating or preventing malnutrition, the policy-maker, the planner, the manager, and of course the nutritionists who advise them require a sufficiently precise knowledge of the particular nutritional situation and its causes. This knowledge will be based on statistics, reports, direct observation, expert advice, and, if necessary, on special surveys.

Frequently (and increasingly so) decisions must be made within a short space of time: for example, when a rural development project wishes to add nutritional considerations to its activities; when a national planning agency requires a chapter on nutrition in a forthcoming development plan; when a health ministry decides to develop its nutrition activities; when a primary health care programme is offered funds to incorporate a strong nutrition component; or when a financial agency is ready to provide a loan or a grant for nutrition activities. In such cases, an in-depth diagnosis of the nutritional situation is often impossible and, as we shall see, in many instances it is not even necessary. A compromise must then be found between a legitimate respect for accuracy and scientific rigour, on the one hand, and the obligation to provide all the relevant answers before the established deadline, on the other. Time being short and resources generally scarce, the nutritional situation has to be assessed rather than studied in great detail.

“Nutritional assessments” have been conducted in recent years in a wide variety of situations and at different levels (national, regional, and project). People of extremely diverse backgrounds and experience have, to a large extent, had to improvise *ad hoc* methodologies according to each new situation. Needless to say, as a result, the relevance and quality of the assessment reports are extremely varied. It is time to build on the best of these, to prune out what is irrelevant, impractical, or costly, and to summarize in one practical document the current “state of the art”.

The context in which assessment is made will sometimes be extremely limited. The nature of the assessment will vary according to such factors as the objectives of the assessment, the amount and reliability of the existing information, the resources available (notably funds and the time at the disposal of qualified personnel), and the time within which the assessment has to be completed.

## **Purpose of the guide**

The purpose of this guide is to assist decision-makers and their advisers to gather, interpret, and use nutritional and associated information efficiently. More specifically it provides a methodology designed to: (a) select the data to be used more objectively; (b) give a global view of nutritional and related problems; (c) organize the work in a practical way; (d) utilize the information more efficiently; and (e) identify the responsibilities of each sector or institution involved in the assessment process.

The guide is intended for use by such people as:

- policy-makers and planners in central government, planning offices, or ministries; planners in ministries of health, agriculture, education, rural development, social welfare, etc.; national food and nutrition councils, etc.;
- nutritionists at the central or regional level;
- programme planners and managers at the regional level, as well as planners and managers of projects, such as health or rural development projects;
- officers in international and bilateral agencies, private and public, who may be invited to advise or assist in an assessment of nutritional status.

The guide is intended for use in assessing the nutritional situation of population groups and it is applicable at national, regional, or local levels. The term "population groups" is used here in a very broad sense. It can be the total population of a country, region, or province; a given stratum, defined by age, occupation, socioeconomic status, or other criteria; those expected to benefit from a project; a group of villages or a borough in a city; etc.

## **Brief history**

The first studies of nutritional status and food intake in developing countries were conducted before the Second World War. However, only in the 1950s and 1960s, when a considerable amount of study was undertaken on the nutrition problems of people in developing countries, did the first large and comprehensive nutrition surveys appear.

By the end of the 1960s, however, the serious limitations and drawbacks of these large surveys were becoming progressively apparent. In the first place, they were expensive and time-consuming

and tended to divert the time and energy of qualified people away from finding actual solutions to the problems at issue. Generally the results were available only after considerable delay, often years after the field work had been completed, and much of the information collected was never fully analysed. The patterns became repetitive: it was shown again and again that malnutrition was associated with poverty. The same major causes were found almost everywhere, but the mechanisms leading to malnutrition were unclear. Basically, these surveys did not prove useful, either for corrective or preventive action or in planning.

Since the early 1970s—perhaps even the late 1960s—a new and more pragmatic approach has evolved, in response to the short-term concerns of governments and funding agencies, both international and bilateral, particularly the United States Agency for International Development (USAID) and the World Bank. Sophisticated and time-consuming surveys have given way to less precise, but also less costly and much quicker, procedures for “assessing” a nutritional situation, its causes, and its trends. These were designed for the rapid identification of priority areas and groups (on which eventually a diagnosis in greater depth could be performed if necessary).

Dozens of nutritional assessments of whole nations (or states or provinces) have been performed during the last ten or fifteen years by governments of developing countries—usually assisted by FAO, WHO, or other specialized agencies of the United Nations, by USAID, by the World Bank, or occasionally by governments of industrialized countries. Most of these assessments were produced over a short period of time (usually in a few months), which was generally dictated by the budgetary cycle of the funding institution. The results are not easily available. First, it is necessary to know where to find them, because few copies are printed and circulated, and in some cases the government prefers to classify them. The assessments that are available vary considerably in length, presentation, quality, and emphasis. However, some general points can be made:

- The assessments do not follow any standardized methods, but are improvised in a pragmatic way, at least partly, by the person or the team in charge. (Some agencies do provide guidelines which are more or less followed.)
- The authors are sometimes nutritionists, more commonly economists, a few calling themselves “nutrition planners”. The range of competence, ideology, or previous experience in the same country is extremely wide.
- There is a widespread tendency to include every piece of information collected during the short assessment period, without any regard to quality or relevance. As a result, many reports are

lengthy and heavy and the required information is sometimes diluted in a wealth of largely irrelevant data.

- Often there is a lack of consistency between (a) the information presented and discussed, (b) the conclusions put forward, and (c) the proposals for action.
- Many authors do not make their basic assumptions clear, presumably because they do not use a manual, or because existing manuals are mechanical rather than conceptual. These manuals seem to describe step-by-step procedures, including the pitfalls, rather than explain the rationale behind the method employed or the concepts on which the procedures are based. This can lead to difficulties of interpretation, as well as misunderstanding of some of the major implications of the assessment's conclusions. If the reader is a government authority with the power to make decisions, the outcome may indeed be unfortunate for the project. In fact, the few manuals or assessment guidelines that do exist are not widely available.
- Few people appreciate that a nutritional diagnosis invariably reflects the ideology of its authors or its potential users. It is partly because of this essential factor, which is discussed in slightly more detail below, that a number of assessments seem to miss the real problem, provide an unintentionally distorted picture, or offer solutions that are barely relevant, if not completely irrelevant.

### **Basic assumptions**

In designing this guide, a number of assumptions were made. These need to be spelled out clearly, so that the best use may be made of the guide, instructions can be easily followed, and assessments may be planned and implemented with maximum efficiency. The underlying assumptions set out below concern both concepts and methods.

### ***Conceptual assumptions***

The literature repeatedly shows that malnutrition is caused by a combination of factors, such as low income, illiteracy, an unhealthy environment, unsatisfactory health services, inadequate food habits, low agricultural productivity, etc., and that all these factors affect each other differently according to the particular situation. It is also clear, judging by observations in countries where nutrition has actually improved, and also by the results, good or bad, of intervention programmes, that improving one of these factors in isolation—raising income, for example, or providing clean water or increasing agricultural output—is generally not enough to improve nutrition

significantly. In this guide, therefore, it is assumed that malnutrition is due to a multiplicity of causes, and that solution of the problem requires action in a variety of sectors.

- (a) *The health sector (or for that matter, any other sector) alone will not solve the nutritional problems of the population.*

The improvement of nutritional status is not the only purpose of the health sector, and for the most part it is not even a major goal. Good nutrition is only one among other objectives, and its priority varies from place to place. However, many activities in the health sector do have a nutritional impact whether this is expressed as an objective or not.

- (b) *An analysis of causes is a prerequisite to any decision-making.*

Before choosing relevant interventions, and indeed before selecting the information required for conducting a meaningful assessment, a thorough understanding of the causes of, and mechanisms leading to, malnutrition is necessary. The assumption here is that the analysis of causes and mechanisms needs to be performed *in depth, intersectorally, and prior to data collection.*

Experience shows that it is not enough to establish an association between malnutrition and such factors as income, education, geographical location, etc., if one is to grasp all the practical implications of the situation. A much deeper understanding, requiring the cooperation of the major interested sectors (agriculture, health, education, rural development, social affairs, etc., depending on the circumstances), is necessary. Furthermore, the causal analysis should be completed prior to data collection. The relevance of an indicator (or the suitability of an intervention) cannot be determined without formulating a hypothesis linking the indicator or intervention to the nutritional situation of the group under consideration.

The analysis of causes before the collection of data is a departure from the common practice of collecting as much information as possible first and then attempting to provide an explanation for the facts observed.

- (c) *A causal model is a key component of the assessment procedure.*

The importance of building a *hypothetical causal model* at an early stage will become clear as the methodology is presented and discussed in Chapter 2. The term “model” is used here to mean a simplified representation of a system or a process, and not in the sense of an example to be followed. Some people might prefer an alternative term

such as *conceptual framework* or *analytical diagram*, but, regardless of the name or the formulation it is given, the hypothetical causal model is simply an ordered set of causal hypotheses linked together in a rational, hierarchical manner. There will be a specific model for each situation, and a new model should accordingly be built for each assessment. A model is not definitive: after data have been collected and analysed, not all the hypotheses will be confirmed and new ones may be formulated, and the model—or rather the results of the causal analysis—may have to be amended. The formulation of causal hypotheses is a continuing process that has to be modified as new information becomes available or the situation is changed as a result of interventions.

The building-up of a causal model of malnutrition in the particular situation under consideration, for which simple and readily applicable methods are now available (see Annex 1), is an essential step for two reasons:

- it gives a global view of nutrition and its determinants;
- it helps substantially in the choice and interpretation of data.

More particularly, the use of such a model:

- allows discrimination between relevant and irrelevant information, thus helping to eliminate useless data and saving the time spent on collecting and processing;
- guides and facilitates the analysis and interpretation of data, thus accelerating the availability of the data and making its interpretation clearer;
- fosters a common understanding of the nutritional problem among people with widely diverse backgrounds;
- assists in the distribution of tasks;
- facilitates interdisciplinary work and thus creates a working methodology that can be maintained even after the assessment is completed; and
- can be adapted to a wide variety of situations and levels.

**(d) *Globality does not mean totality.***

Even if the causal analysis is comprehensive and includes factors beyond the scope of the sector, the size of the project, or planning intentions, this does not imply that every piece of information must



be included in the data collected, or that action should be designed to combat all causes. While the analysis must be broad and encompass as much as possible, it should focus only on what is feasible and effective, given existing constraints.

- (e) *A nutritional assessment is not independent of the ideology of its author and its users.*

Malnutrition must be viewed in a context largely determined by culture, type of social organization, distribution of power, and dominant values among those who hold power. In different contexts, the same statistical figures and survey results will indicate different problems and lead to different courses of action. This becomes apparent during the building of a causal model. The choice of some chains as important, the rejection of others, and the depth to which the analysis is permitted to go, reflect the political context of the situation and the personal values of the participants. Similarly, the selection of the areas of the model that are to be analysed, i.e., the choice of the data to be collected, will influence interpretation and hence the type of action eventually taken.

### *Methodological assumptions*

- (a) *The objectives of the assessment must be clearly defined at the outset.*

An assessment, of necessity, has a clear purpose; in this respect, it is quite different from surveys or studies that merely collect data or are carried out as part of a research programme. It is justified only when taken as a preliminary step to further action. Therefore, its objectives, which can vary widely, should be precisely defined. For example, the objectives might be:

- to select priority areas or groups for action;
- to formulate or analyse the objectives of a nutrition policy (or the nutritional component of a development or sectoral policy);
- to contribute to the selection of interventions or major project components;
- to furnish the basis for surveillance, monitoring, and/or evaluation;
- to inform policy-makers, politicians, and public opinion in order to motivate them (i.e., to serve as an “eye-opener”);

- to help in deciding whether to undertake a survey and, if so, for what purpose and of what kind.

Experience shows that, as the preliminary data are being assembled and an overview taken of the situation, or as discussions are being held with decision-makers and representatives of different sectors, the initial objectives may sometimes have to be amended, and occasionally markedly changed. The more precise and clear they are to all parties involved, the easier the joint work will be.

*(b) An assessment does not only consist of collecting data and describing a situation. It is also an explanation and an identification of trends.*

It is not enough just to describe a situation: an explanation is needed from which solutions can be found. Such an explanation must be consistent and take into account the evolution of the situation over time. This has three implications for the assessment:

- the data to be collected (and the indicators to be used) will relate not only to the nutritional state, but also to its causes;
- the causes of malnutrition need to be analysed, both to provide an explanation and to identify major determinants;
- trends should be identified to provide a dynamic rather than a static image of the nutritional situation and its causes, i.e., a film rather than a snapshot.

As the last point suggests, it is important to collect retrospective data particularly for the prognostic aspect of the assessment (i.e., for estimating what is likely to happen if things continue in the same way).

*(c) Deadlines and financial constraints restrict the choice of data to be collected.*

The data to be collected and used must be kept to a strict minimum, i.e., they must be relevant. This means that:

- the assessment will have to rely exclusively or mainly on existing data;
- the relevance of all information must be assessed, hence the importance of the causal analysis (performed prior to data-gathering, as mentioned above).

- (d) *The maximum use of existing data is the rule: large surveys are often unnecessary.*

As stated earlier, large surveys are costly and time-consuming and often the data gathered are irrelevant. However, in most countries, relevant information already exists which can meet the assessment's objectives in a more cost-effective way. This may be readily available (in published statistics, survey reports, articles, studies and books, etc.) or may require a certain amount of "digging", i.e., active searching in government offices, forgotten files, etc.

- (e) *It is important to break down the data.*

Aggregate data often do not adequately reflect the real situation and may even distort it. Therefore those making the assessment should assume that the factors affecting malnutrition are distributed in a heterogeneous manner and, depending on the need, data should be broken down according to one or more criteria, such as:

- region, geographical location, urban/rural differences;
- socioeconomic, ethnic, or occupational categories;
- age groups; etc.

Data can easily be reaggregated later, if it appears that the disaggregation was unnecessary, or if it results in empty or almost empty sections.

- (f) *A nutritional assessment is the responsibility of an interdisciplinary team and not of one or two individuals, even if they are specialists.*

The team should include members of various disciplines and representatives from each of the main sectors involved in present or future nutrition-related work. This basic methodological assumption rests on two observations:

- The causes of malnutrition, being multiple and complex, cannot be fully understood by one individual, at least when time is short. Hence the need to share a common understanding: one team-member will have a deeper understanding of one aspect, while another will be knowledgeable in a different field.
- The action eventually taken will be multisectoral, i.e., it will involve two or more sectors. Even where only one sector is involved, it will still have to act within a global context which needs to be clearly understood by the authors of the assessment, as well as by the decision-makers and implementers.