The Food and Agriculture Organization food-composition initiative¹⁻⁴

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ABSTRACT  The 1992 International Conference on Nutrition, new legislation in developing countries, and international trade agreements have renewed interest in food-composition data. Because of the costs involved in gathering such information and the need for it to be uniform, collaborative efforts are required. The production of new food-composition data must be viewed with respect to value gained for money spent, the need for more precise information, and the opportunity to use new analytic methods while not depending too heavily on high-technology systems. The Food and Agriculture Organization and the United Nations University have agreed to collaborate in stimulating the development of new food-composition programs. Their efforts will be directed toward promoting national, regional, and international activities in the food-composition field and will include strengthening existing laboratory facilities and programs, publishing technical manuals and documents, assisting countries to disseminate data, training workers, and sponsoring regional workshops. The Food and Agriculture Organization is well positioned to fulfill this coordinating role because of its past work in food composition, international mandates regarding its activities, its established communication system with national governments, and its ability to provide open forums for discussion of food-composition issues.

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INTRODUCTION

In the past few years, several events and factors have reemphasized the importance of food-composition work. In December 1992 the International Conference on Nutrition (ICN), held in Rome, called for increased attention to improved nutrition and considered this topic broadly to include improved food production, processing, marketing, and most important, access to adequate supplies of good-quality and safe foods for all. ICN emphasized improved policies and programs for food, nutrition, health care, and education. In addition, through the World Declaration and Plan of Action for Nutrition endorsed by the nations participating in the conference, ICN called for all countries to prepare comprehensive national plans of action for nutrition that would include the strengthening of food-composition work.

At the same time, new legislation in developed countries, the General Agreement on Tariffs and Trade (GATT), and the recognition of the Food and Agriculture Organization (FAO)/World Health Organization (WHO) Codex Alimentarius standards as the benchmark for foods in international trade have increasingly required more accurate nutritional labeling of foods. In addition, consumers in all countries have begun to demand more detailed information about both the raw and processed foods they purchase. Meanwhile, the traditional use of food-composition information in school and institutional feeding programs, food technology, and nutrition programs has continued as usual.

FAO has long been successful in producing and disseminating food-composition tables and related information at the international level. It began these activities in the late 1940s and its first food-composition tables were published in 1949 (1) and the early 1950s (2). In the 1960s and 1970s, FAO published regional food-composition tables for Asia, Latin America, and Africa (3–5) and in 1982 for the Middle East (6). Most of this work was completed in the late 1970s and the tables remained among FAO’s “bestsellers” for a long time. After the tables were completed, FAO reduced its work in the food-composition area.

In the 1980s, however, United Nations University (UNU) responded to the continued interest in food composition by setting up the International Network of Food Data Systems (INFOODS). Subsequently, as a result of the ICN and new developments in food standards and food trade, UNU and FAO agreed on the need for new collaborative work to provide more accurate food-composition information by means of additional analyses of foods in different parts of the world or better sharing of existing validated data. Improved data on food composition would be used to meet regulatory requirements, provide food information to consumers, enable and stimulate

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international trade, and continue to meet the needs of nutritionists, dietitians, industries, and governments.

FACTORs INVOLVED IN INITIATIVES TO IMPROVE FOOD-COMPOSITION DATA

The nature and complexity of food-composition research makes collaboration among different institutions and sectors working in this area highly desirable and perhaps necessary. Although the emphasis on effective programs to improve nutrition for all and new legislation on labeling mandate acquisition of more accurate food-composition data, government budgets are shrinking and most government departments are no longer able to finance detailed chemical analyses for building new nutrient databases. This problem is particularly acute in developing countries. Therefore, FAO views strengthened collaborative work as an opportunity to reduce the cost of providing food-composition data that will meet the needs of all developing countries.

It is also necessary to look at the production of new food-composition data with respect to value for money. In planning a food-composition program, both the specific use of any new data generated and the costs involved in achieving the quality of data required should be clearly understood and evaluated. A more detailed description of the content of a food does not always indicate better research or output and it is essential to ensure that costs are balanced by benefits and needs and that scarce available resources are used effectively. Only the food-composition information that is absolutely necessary for required activities should be obtained, thereby keeping expenses as low as possible.

Nevertheless, it should not be forgotten that there are good reasons to achieve more precision in food-composition data. For example, demonstrating associations between food and nutritional status in the general population and designing nutrition-intervention strategies requires knowledge of the exact composition of foods in the usual diet. The data must be sufficiently accurate to prevent mistakes in setting policies and creating interventions and to ensure that the information does not adversely affect the quality of policy decisions.

There have been dramatic improvements in the precision and validity of analytic methods during the past 20 years and this has led to questions about the accuracy and validity of older analyses. Because of the new nutrition policies, food-labeling requirements, and trade implications, it is justified and necessary to use new procedures and methods to repeat previous analyses and obtain more accurate results. As mentioned earlier, however, the choice of foods to be analyzed and the sampling plan to be used must be judged carefully in relation to the proposed use of the data and local current and desirable dietary patterns.

THE FAO FOOD-COMPOSITION INITIATIVE

The need for better access to reliable, representative information and the realization that international cooperation could facilitate its generation and uniformity were the key issues of the FAO/UNU meeting on food-composition work held in Tunisia in March 1994 (unpublished data). At that meeting, which was attended by representatives of governments, academic institutions, industry, and nongovernmental organizations, there emerged a strong consensus on the need for a network of institutions collaborating on food-composition activities. The attendees fully endorsed the possible collaboration between FAO and UNU for the purpose of stimulating the development of new food-composition programs. They also agreed that the framework developed for cooperation at national, regional, and international levels offered a blueprint for further development. A regional orientation for joint work by collaborating institutions was viewed as an especially appropriate context for future activities.

The efforts of FAO in this regard will be specifically dedicated to promoting interregional and intraregional cooperation. However, although we strongly believe in such cooperation, we are convinced that its effectiveness will depend on long-term national capacities. Thus, a primary objective of FAO's efforts is to strengthen these capacities by stimulating the establishment of national food-composition programs in various developing countries.

We also feel that the renewal of food-composition activities should be linked to ongoing activities aiming at strengthening food-control systems. This would include the improvement of food-analysis capabilities and laboratory facilities, an endeavor that currently represents the largest area of field activities supported by the Food and Nutrition Division of FAO. Since 1986 FAO has provided > $7 million in technical and financial assistance to improve the facilities and analytic capacity necessary for food-control activities in 20 countries in Africa. Many of these resources can also be used for food-composition work. We believe that considerable benefits result when support for food-composition activities is linked to overall efforts to strengthen the analytic component of national food-control systems. This is particularly true in areas in which human and material resources are limited. FAO will continue to look for ways to provide support that can be mutually beneficial for food-composition and food-control activities. The organization has already produced several technical manuals and documents on most aspects of food control and laboratory analysis of foods. Similar manuals to support food-composition work, covering, for example, sampling and sample handling, recommended analytic procedures and equipment, and data quality assurance, are envisioned.

From the operational point of view, a broad approach to the potential contribution of food-composition information is needed. A network that focuses too much on tools, technology, or highly sophisticated data-management systems may be less useful and less cost-effective than other alternatives for all those involved in a given situation. The basic objective is to generate, disseminate, and promote the use of good, high-quality food-composition information by researchers, policymakers, and practitioners in both the public and private sectors. To help countries achieve this objective, FAO will concentrate on the following aims:

1) To promote and expand activities at national, regional, and international centers active in food-composition work to increase national and regional capacity to generate, manage, and disseminate, in a timely manner,
food-composition information targeted at regional and national users;
2) To assist in formulating standard terminology for the identification of foods and nutrients, sampling procedures for food, requirements for handling food samples, analytic methodology, and assessment criteria for data quality that will make network data more compatible across regions;
3) To promote the dissemination and appropriate use of food-composition data; and
4) To provide training to strengthen and build the capacity of institutions and individuals involved in all aspects of food-composition work.

At the international level, increased coordination and standardization are necessary to integrate the different systems dealing with food-composition data so that access to such information is improved and comparability of data for the large numbers of users in many countries and many kinds of institutions is ensured. All users share a frequent need for new food-composition values and updating of existing values. Collaborative work by FAO and UNU can provide a model for the coordination of activities in future programs, particularly because of their major achievements in developing procedures to ensure compatibility and interchange of data. Compatibility is essential to reducing expenses associated with generating and maintaining food-composition data on a global basis and to assisting developing countries in decreasing the costs of producing reliable information. FAO is in an excellent position to fulfill a coordinating role because of several factors.

1) FAO has the United Nations mandate to participate in activities in all sectors related to food at the international level, such as issues pertaining to the Codex Alimentarius, food quality, food trade, and food composition.
2) FAO has a broad international mandate to be involved in food-related development issues that require food-composition data.
3) FAO has an established system of communication with national governments to promote food-composition activities and regional cooperation at the governmental level.
4) FAO has previously published food-composition data for use in developing countries and this information has been widely circulated for several decades.
5) FAO is well placed to shape actions on interdisciplinary problems that require an open forum for formulating solutions.

The strategy that FAO is designing to implement the creation of the food-composition network relies on a regional model for action that allows local control of food-composition activities and promotes direct working relations among institutions in developing countries. The effectiveness of this model will depend on adequate communication and quality control procedures. The aim of the strategy is to create officially recognized and approved data on food composition that will allow exporters to label food products adequately for trade, marketing groups to validate health claims about products with foreign ingredients, and governments to use information on imported foods in developing policies related to the improvement of food supplies and the nutritional status of the population. The regional model does not require FAO to allocate resources to maintain a central food-composition database. A large global database of the complexity and quality demanded by users would require far more resources than national and regional compilations with little or no increase in effectiveness.

The strategy is best seen as a dynamic system of information handling for food-composition data that will perform such functions as:

1) generating and distributing continuous revisions to food-composition data that occur as a result of changes in product formulation, food-processing techniques, food varieties, production systems, and improvements in analytic techniques;
2) formulating and updating standards and procedures that specify the minimum quality criteria required for food-composition data; and
3) maintaining a structure of committees of government and institutional representatives that will approve standards, procedures, and priorities for food-composition work.

The benefits are likely to be a reduction in the cost of generating, managing, and using food-composition data. Precision in food-composition data will be achieved in many separate institutions at the same time by the consistent application of valid analytic, naming, and management procedures. Adherence to these standards will facilitate trade in food and formulation of food-related government policies. The set of food-composition data created will also have important additional benefits, including the provision of reliable information for nutrition- and health-related research and detailed descriptions of traditional foods relevant to national cultures.

How will FAO stimulate and support the activities of institutions and national governments and perform its coordinating role? First, FAO will organize regional workshops to discuss food-composition issues and promote activities with selected institutions from different countries to start building regional networks of collaborating institutions. Workshops to discuss technical issues associated with food composition in Eastern Europe, Francophone Africa, Asia, and Latin America have been held or are being planned. The goal of these meetings is to help the regions and the countries in them determine their food-composition needs.

One such workshop, held in September 1994 in Accra, Ghana (unpublished data), was convened to discuss the needs of Anglophone African countries and the development of national food-composition activities in the region. The main problems reported during that meeting were inadequate laboratory facilities, a lack of trained personnel, and a lack of funds. The insufficient technological capability to create and maintain food-composition databases was emphasized. Another concern was inadequate awareness on the part of decision-makers of the importance and use of food-composition data. The meeting participants believed that this faulty perception was, in many instances, the principal reason for insufficient policy and financial support.

In addition to organizing regional workshops, FAO intends to produce various documents pertaining to data generation and management. One of them, Guidelines for Developing and Managing a National Food Composition Programme (in preparation), will describe all the necessary steps for establishing and running a food-composition program. Guides addressing
more specific topics, such as laboratory design, sampling, and training, are also planned and will be developed with the aid of feedback from the regional workshops. The issue of standardization for facilitating interchange of food-composition data among countries and on the regional and global level must be addressed by collaborations with institutions such as IN-FOODS and other organizations with already operational systems. Again, increased cooperation is required to select appropriate systems that will allow maximum efficiency in data management at the lowest possible cost.

FAO's main role will continue to be as a coordinator and facilitator in assisting developing countries in establishing an effective and reliable network for food-composition data and formulating and implementing national food-composition programs. However, satisfactory results can be achieved only with the collaboration of all those working in this field.

REFERENCES