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# Preface

In response to commitments made by Heads of State and Government at the World Food Summit in November 1996, a Technical Consultation on Food Insecurity and Vulnerability Information and Mapping Systems (FIVIMS), held at FAO in March 1997, recommended, *inter alia*, the preparation of guidelines for the establishment of FIVIMS at the national level. This recommendation was approved by the Committee on World Food Security (CFS) at its annual meeting in April 1997, with the further recommendation that national governments be fully involved in the development of FIVIMS guidelines.

Draft guidelines were subsequently prepared by FAO and technically reviewed by an Inter-agency Working Group (IAWG) in December 1997. Based on comments received at that time, a second draft was prepared for review and comment by national experts from a selected number of countries, representing different geographical regions, different kinds of food security problems and different levels of information systems development. These experts participated in a second meeting of the IAWG, hosted by the International Fund for Agricultural Development (IFAD) in Rome in April 1998, at which time the second draft was discussed. At that meeting, further recommendations for improving the draft were made, and a third draft was produced for consideration by the CFS at its Twenty-fourth Session in June 1998. The IAWG also decided to produce, subsequently, a series of FIVIMS technical notes that will contain methodological guidance to national programmes. Those notes will serve as a companion to the present document.<sup>1</sup>

The draft guidelines are organized into six chapters covering: the problem to be addressed by FIVIMS, the current state of relevant national information systems, the main objectives and operating principles of national FIVIMS, the expected benefits and main user groups, typical information products and dissemination methods, and steps for institutionalization. Definitions of key terms and citations of relevant World Food Summit commitments are incorporated at appropriate points throughout the text, together with information provided by national participants at the second meeting of the IAWG about existing information system activities in their countries.

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<sup>1</sup> This document was prepared through a collaborative interagency effort, finalized in consultation with experts and officials from member countries during the Second Meeting of the Inter-agency Working Group (IAWG) on Food Insecurity and Vulnerability Information and Mapping Systems (FIVIMS), hosted by the International Fund for Agricultural Development (IFAD) from 15 to 17 April 1998. This document was also endorsed by the Committee on World Food Security at its Twenty-fourth Session in Rome in June 1998.

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# Background

## The problem **MAGNITUDE AND NATURE OF FOOD INSECURITY AND VULNERABILITY**

The World Food Summit estimated that approximately 840 million people in developing countries subsist on diets that are deficient in calories. Roughly 96 percent of these food-insecure people suffer from chronic deficiencies, and approximately 4 percent experience temporary energy shortfalls caused by natural or human-induced events. Approximately 170 million children under five years of age are underweight, representing 30 percent of the developing world's children. The number of people who are food-insecure as a result of specific nutrient deficiencies is less well known, mainly because of difficulties in definition and measurement and lack of data, but the numbers are likely to be much greater. The best available estimates suggest that approximately 250 million children are deficient in vitamin A, more than 800 million people suffer from iodine deficiency, and as many as 2 billion people are affected by iron deficiency and anaemia. The vast majority of the food insecure, whether their under-

### **What is meant by food insecurity and vulnerability?**

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Household food security is the application of this concept at the family level, with individuals within households as the focus of concern.

For the purpose of FIVIMS, food insecurity exists when people are undernourished as a result of the physical unavailability of food, their lack of social or economic access to adequate food, and/or inadequate food utilization. Food-insecure people are those individuals whose food intake falls below their minimum calorie (energy) requirements, as well as those who exhibit physical symptoms caused by energy and nutrient deficiencies resulting from an inadequate or unbalanced diet or from the body's inability to use food effectively because of infection or disease. An alternative view would define the concept of food insecurity as referring only to the consequence of inadequate consumption of nutritious food, considering the physiological utilization of food by the body as being within the domain of nutrition and health.

Vulnerability refers to the full range of factors that place people at risk of becoming food-insecure. The degree of vulnerability of individuals, households or groups of people is determined by their exposure to the risk factors and their ability to cope with or withstand stressful situations.

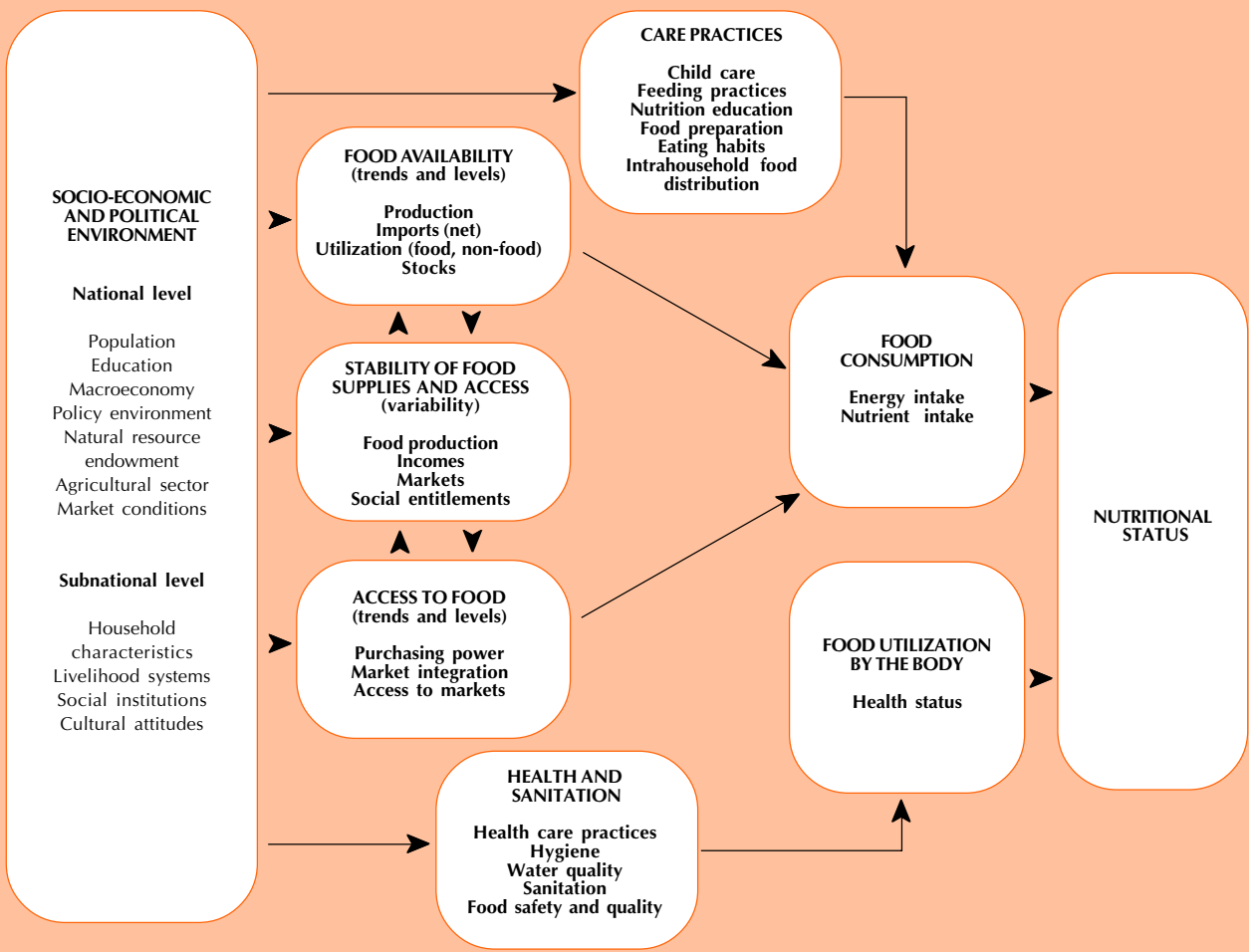
nourishment is caused by deficiencies in energy or by deficiencies in micronutrients, live in low-income developing countries. Millions live in conditions that expose them to varying degrees of risk – a concept that is generally well understood but rarely quantified.

### CROSS-SECTORAL DIMENSIONS OF FOOD INSECURITY

Food insecurity is a complex phenomenon, attributable to a range of factors that vary in importance across regions, countries and social groups, as well as over time (see Figure). These factors can be grouped in four clusters representing the following four areas of potential vulnerability:

- the socio-economic and political environment;
- the performance of the food economy;
- care practices;
- health and sanitation.

**Conceptual framework for understanding the possible causes of low food consumption and poor nutritional status**



In order to achieve success, strategies to eliminate food insecurity have to tackle these underlying causes by combining the efforts of those who work in diverse sectors such as agriculture, nutrition, health, education, social welfare, economics, public works and the environment. At the national level, this means that different ministries or departments need to combine their complementary skills and efforts in order to design and implement integrated cross-sectoral initiatives which must interact and be coordinated at the policy level. At the international level, a range of specialized agencies and development organizations must work together as partners in a common effort.

### **INFORMATION NEEDS AND CONSTRAINTS**

The World Food Summit resolved to reduce the number of undernourished people in the world by at least 50 percent by the year 2015. In addition, it set the longer-term goals of, eventually, eradicating hunger and achieving food security for all. If these objectives are to be achieved, appropriate policies and action programmes that are directed specifically to the people who are undernourished or at risk need to be developed and implemented. An important first step is the identification of food-insecure and vulnerable groups, the prevalence and degree of low food intake and undernutrition among these groups and the causes of their food insecurity and vulnerability. Such information makes it possible to monitor and assess the situation and to design and, eventually, evaluate possible policies and interventions.

If they are to be effective, policies aimed at promoting food security require accurate and timely information on the incidence, nature and causes of food insecurity and vulnerability. Unfortunately, such information is lacking in many countries, both developing and developed. There is a particular lack of good information at the subnational and household levels on key questions such as:

- Who are the food insecure and where do they live?
- What is the nature, frequency and degree of their food insecurity?
- What is the nature of their livelihood systems and what kinds of constraints are they experiencing?
- Who are the vulnerable and where are they located?
- What is the nature and degree of the risks that they face?
- What is the nature of their coping strategies in response to these risks, and how effective are they?

Such information is critically important for both national and local decision-makers if they are to formulate effective policies and programmes that address the real needs of the food insecure, and if they are to design and direct interventions that actually reach undernourished and vulnerable people efficiently. Most countries have established statistical services and systems that generate and analyse information. However, many of these national systems are currently constrained by a number of inter-related factors, including:

- lack of political commitment because of competing demands for the allocation of scarce resources; difficulty in perceiving the immediate and tangible benefits of investing in better food security information systems; a lack of political influence on the part of the potential beneficiaries of better food security information;

- and the sensitivity of some information about the national or subnational food security situation;
- institutional constraints caused by an absence of effective intersectoral and cross-ministerial linkages which frustrates efforts to promote the sharing of data collection tasks and information; the focus of most information collection and analysis is only on purposes that are specific to the sectoral or subsectoral unit that is collecting the information; difficulty in achieving potential efficiencies by combining or rationalizing different information systems; a lack of attention to the issues of compatibility (periodicity, spatial coverage, sample selection, selection of indicators and storage and data management) that would facilitate use by other sectors; a failure to share knowledge about available data or information; and frequent duplication of data collection and analysis efforts as well as waste of resources;
  - technical constraints resulting from lack of trained human resources to manage complex information systems and conduct multisectoral analyses of the kind required for tackling food security issues; the inability of technicians to stay abreast of current best practices for designing and implementing information systems that are relevant for measuring and monitoring food insecurity and vulnerability; and lack of access for national staff to new computer-based analytical tools;
  - financial constraints which can significantly reduce the efficient and effective operation of information systems, in particular the collection and analysis of primary data and other information at the subnational or household level. As a consequence, surveys may not be conducted on time or at the optimal frequency, sample sizes may be too limited, measurement and analytical equipment may be outdated, restrictions may be placed on the dissemination of results, and staff morale may be low and turnover high.

The World Food Summit recognized these problems and stressed the importance of finding practical solutions. Paragraph 4 of the World Food Summit Plan of Action concludes that: "It is necessary to target those people and areas suffering most from hunger and malnutrition and identify causes and take remedial action to improve the situation. A more complete, user-friendly source of information at all levels would enable this." A Food Insecurity and Vulnerability Information and Mapping System (FIVIMS) is the response to that challenge. ●



## Current state of national information related to food insecurity and vulnerability

### TYPICAL INFORMATION SYSTEMS

Most countries already have a range of statistical services and information systems to generate and analyse information that is relevant for measuring and monitoring food insecurity and vulnerability. National statistical services normally conduct periodic censuses and surveys, while line ministries, such as those responsible for agriculture, health, trade, labour, industry or the environment, often maintain subject matter databases that contain a wealth of useful information.

Many countries have also established information units or systems for such specific purposes as providing early warning, promoting market efficiency, monitoring health and nutrition status or preparing food security situation assessments. In many developing countries, similar information systems are maintained by donor agencies or non-governmental organizations (NGOs), either in parallel with ongoing government-supported information systems or in partnership with governments. These activities are usually established for purposes of monitoring specific programmes or for assessing the need for food aid and directing its delivery.

General categories of existing national information systems that are relevant to FIVIMS include the following seven examples:

- **Agricultural information systems.** Often operated by the Ministry of Agriculture or the national statistics office, these systems provide information on a range of topics, including agricultural production patterns and performance, agricultural trade, agricultural inputs, farming systems and rural income levels.
- **Health information systems.** Usually located in the Ministry of Health, these systems cover clinical data and other information from the health sector. In many instances, they include data subsets on nutrition indicators obtained from national nutrition surveys or from monitoring and surveillance systems managed by a nutrition unit located either in the Ministry of Health or, in some countries, in the Ministry of Agriculture.
- **Land, water and climatic information systems.** These systems provide georeferenced information on topography, landform, characteristics of soils, climate, agro-ecological zones, water availability and use, land use and cover, arable land, land suitability and productivity, land tenure, irrigation, water rights, and infrastructure. Organized into Geographic Information System (GIS) databases, such information is valuable in the examination of several major determinants of food availability.
- **Early warning systems.** Early warning systems, which monitor agricultural production indicators during the cropping season to produce timely domestic food supply and demand projections, vary widely in scope. In some countries they address only those information needs that are related to basic staple food availability, while in others they encompass a wider set of variables, including access

to food. Outputs may include crop production monitoring reports during the agricultural season, agricultural production forecasts, estimates of stock levels, market prices, food requirements, imports and exports of staple foods and information on household incomes.

- **Household food security and nutrition information systems.** These systems focus on the collection and analysis of data at subnational levels, usually at the district, community and household levels. Data may include food production and stock levels, food prices, sources of livelihood and indicators of health and nutrition. Household food security and nutrition information systems require extensive primary and secondary data collection networks, and often function in close collaboration with other national and subnational information systems.
- **Market information systems.** These systems are designed to enhance market efficiency and transparency by providing information on agricultural inputs, commodity prices and marketing opportunities, as well as information that is relevant to improving the functioning of agricultural markets. Market information systems are particularly prominent in countries that have fully liberalized agricultural marketing systems, and are being established in countries in transition from a controlled to a liberalized market environment.
- **Vulnerability assessment and mapping systems.** These systems produce reports that describe and analyse the risk factors to which vulnerable population groups are exposed. They generally make extensive use of GIS to analyse and simplify the presentation of often complex sets of information and relationships.

Typical examples of national information systems of relevance to FIVIMS are shown in the following six boxes.

## Mozambique



### SNAP

#### National early warning system

##### Purpose

The purpose of SNAP is the timely transmission of information on potentially serious food shortages.

##### Institutional set-up

Although the secretariat of the early warning system is not yet formally established, methods and procedures for the acquisition, management, interpretation and dissemination of information relevant for early warning purposes are well established.

##### Data and information

SNAP carries out agronomic monitoring and field surveys, collects agrometeorological and satellite information for forecasting and estimating area planted, yields and staple food production, and generates staple food supply and demand balance sheets.

##### Products

It produces regular reports and bulletins (at ten-daily or monthly intervals), and issues special alerts and technical notes as needed, in the form of tables, graphs and satellite images.

##### Constraints and challenges

It suffers from a lack of formal structure, which is a challenge to the future sustainability of the information system. It also needs more formal linkages with other partners, in order to achieve better coordination, and further decentralization of information system activities, including the provincial-level analysis.

##### Linkages with FIVIMS

FIVIMS activities in Mozambique are seen as having the potential to promote greater collaboration and networking among the many different information systems that support the overall food security development objective.

## Senegal



### CASPAR

#### Information unit for food security and early warning on agricultural, pastoral and forestry concerns

##### Purpose

Early warning and food security planning are CASPAR's main functions.

##### Institutional set-up

CASPAR is based at the Ministry of Agriculture and also serves as Secretariat to the Food Security Council in the Office of the Prime Minister.

##### Data and information

It monitors agricultural production, rainfall, pests and diseases (based on rainfall data and satellite information, area under cultivation, production estimates and assessments of pastoral areas), cereal prices and other market information, as well as monitoring and analysing geographic areas with food-insecure population groups (including estimates of the number of villages threatened by severe food insecurity or famine).

##### Products

It produces periodic reports, including twice-yearly bulletins.

##### Constraints and challenges

It suffers from limited access to a broader range of food security data, such as anthropometric and nutrition information, and requires easier access to other databases.

##### Linkages with FIVIMS

CASPAR has been appointed as the national FIVIMS focal point.

## Zambia



### FHANIS Food, health and nutrition information system

#### **Purpose**

FHANIS has an advocacy role with the objectives of strengthening design and implementation of food and nutrition programmes, and improving the focus of food relief and supplementary feeding programmes. It also carries out research activities and monitors the impact of government policies on the welfare of the population.

#### **Institutional set-up**

It is based in the Population and Development Department of the Ministry of Finance and Economic Development and has close linkages with the Central Statistics Office. It is governed by two committees: a multi-ministerial Steering Committee and a Technical Committee. FHANIS provides a multisectoral forum for discussion of the household food security and health and nutrition issues that are to be brought to the attention of senior policy-makers.

#### **Data and information**

It collects general food security information at the household level (food availability, stocks, prices, trade and markets, livestock), health and nutrition variables and information on water and sanitation, as well as on food consumption and employment levels in urban areas.

#### **Products**

It produces baseline and evaluation reports, district profiles, regular tabular reports and monitoring reports (including maps and graphs).

#### **Constraints and challenges**

It is currently understaffed and still largely dependent on donor financing. It receives erratic and inadequate funding from the government. User demand for data

and information is increasing and FHANSIS is unable to cope with requests. The analysis of available information and data-sets needs to be improved, and information for longer-term development planning and for emergency purposes needs to be collected.

#### **Linkages with FIVIMS**

FHANIS addresses many of the tasks and products envisaged under FIVIMS.

## Peru



### SISVAN Food and nutrition surveillance information system

#### Purpose

The main objective of SISVAN is improved efficiency and effectiveness of food and nutrition interventions in the country.

#### Institutional set-up

The Ministry of Health is its lead institution, and it has the collaboration of the Ministry of Agriculture and the National Statistical Institute. The information needs of different user groups have been determined, and a food and nutrition data bank designed. A remote, cross-sectoral network will be established with the Ministry of Health.

#### Data and information

It collects information for country food and nutrition profiles, and indicators on nutrition status, health, access to health facilities and food security. It monitors demographics and education facilities, and has a database of ongoing projects and programmes.

#### Products

SISVAN produces bulletins, graphs, tables and maps.

#### Constraints and challenges

It is difficult for the SISVAN database to satisfy all of its users' needs; for greater effectiveness, existing databases need to be linked directly (electronically) to SISVAN.

#### Linkages with FIVIMS

SISVAN is being established in the spirit of FIVIMS – as an intersectoral initiative – which provides a solid basis for further FIVIMS-related work in Peru.

## Poland



### Moves towards a national food security, nutrition and health information system

#### Purpose

The main purposes of such an initiative are the elimination of food insecurity and the prevention of deficiencies and diseases related to inadequate nutrition.

#### Institutional set-up

A preliminary proposal has been made for the establishment of a national information unit on the state of food security, nutrition and health in Poland.

#### Data and information

The information unit is expected to compile data on the demographics and general living conditions of the population, assess the health status of specific population groups, monitor poverty indicators, analyse household budget surveys (particularly in respect to food consumption), and compile food balance sheets.

#### Products

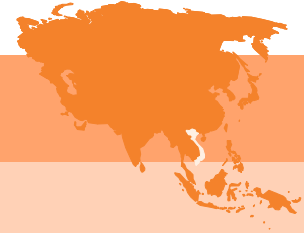
It has not yet been determined what the products will be.

#### Constraints and challenges

A multisectoral policy needs to be formulated, in order to enhance the understanding that food security, nutrition and the prevention of diet-related diseases should be treated as one complex problem which can only be resolved through intersectoral collaboration.

#### Linkages with FIVIMS

In support of improved food security and nutrition, it is absolutely necessary that ongoing and planned work on information systems in Poland is linked to the FIVIMS initiative. However, this will have to be a step-by-step process. In this regard, the National Food and Nutrition Institute is prepared to cooperate with UN agencies and other organizations in the realization of a FIVIMS in Poland.



## Viet Nam

### FIVIMS-related information systems

#### Purpose

The systems' role is to support policy decisions regarding movements in rice markets and to satisfy the food and nutritional requirements of the population.

#### Institutional set-up

At least four information system activities produce information that is of relevance to FIVIMS: a crop monitoring system (CMS) and a market information system (MIS), which are both run by the Ministry of Agriculture and Rural Development; nutrition surveys, which are conducted by the National Institute of Nutrition (NIN); and household income and expenditure surveys, which are produced by the General Statistics Office.

#### Data and information

The CMS was established to generate paddy production forecasts and estimates on a monthly basis. It also reports on the main agricultural activities, aggregating information collected from the community level. The MIS is primarily concerned with the prices of rice at key market centres in all 61 provinces. NIN's nutrition surveys provide information on food consumption, as well as the status of specific population groups. Surveys conducted by the General Statistics Office are important for understanding the income and expenditure patterns of farming households in selected provinces.

#### Products

The CMS produces reports (at ten-daily and monthly intervals) on agricultural production and conditions affecting the rice crop in the field. The MIS produces monthly reports, and NIN and the General Statistics Office produce ad hoc reports. Mapping techniques are rarely used in any area of data and information dissemination.

#### Constraints and challenges

The CMS is experiencing operational problems after technical assistance ended, and also faces financial constraints to the updating of baseline data. The MIS should assess the needs of vulnerable population groups, but resources for doing this are limited. NIN and the General Statistics Office have inadequate national databases, and methods need to be improved if accurate data and information are to be available at the national level.

#### Linkages with FIVIMS

An interministerial National Food Security Committee, chaired by the Minister of Agriculture, has recently been established. Through this committee, good linkages with FIVIMS may be established in support of improvements in national information systems.

## VARIATION ACROSS COUNTRIES

Although a great number of national information systems of various kinds have already been established around the world, or are in the process of being developed, they vary widely from country to country. Variation relates to the number of systems established and their content, how well they are integrated, their geographic coverage, the indicators and analytical techniques they use, the quality and reliability of the information they produce, and their institutional sustainability. Differences with regard to the availability of financial resources, access to state-of-the-art technology, the skill level of officers responsible for day-to-day operation and management, and the strength of institutional support structures may all affect performance. Components of many national systems are funded and managed as projects, which are often dependent on external financial and technical assistance.

The wide variation in the level of information systems development across countries has several important implications. First, not all national systems have an equal need to be strengthened. Second, not all of the countries that need support require it in the same areas. Third, many lessons can be learned from the experiences of countries where information systems are better developed, and these countries may play an important role in transferring best practices to those countries that request assistance. Finally, there can be no single formula for strengthening national food security and vulnerability information systems. Each case must be considered individually in order to determine its unique set of objectives, particular constraints and specific needs. ●





## Goals, objectives and operating principles of FIVIMS at the national level

Although many countries have already established information systems that provide FIVIMS-related information at the national level, in many others there is still a lack of locally collected information that has a direct bearing on the situation of food-insecure and vulnerable households and individuals. To encourage greater effort in this area, the World Food Summit Plan of Action calls for the development and further elaboration of food insecurity and vulnerability information and mapping systems at both the national and global levels.

At the national level, strengthened and more integrated food insecurity and vulnerability information systems will provide better and more up-to-date information to the policy-makers and members of civil society concerned with food security issues at all levels in their country, and will facilitate the assessment of policy and programme options for improving the situation. National systems will also be called on from time to time to provide information that will enable the international community to monitor and guide progress towards meeting the global targets set at the World Food Summit.

The **goal** of national FIVIMS is to contribute to the reduction of food insecurity and vulnerability.

The **purposes** of national FIVIMS are to facilitate different user groups' access to

### Summit commitments relating to the establishment of food insecurity and vulnerability information and mapping systems

Commitment Two, para 20 (a) states that "governments, in partnership with all actors of civil society, as appropriate, will develop and periodically update, where necessary, a national food insecurity and vulnerability information and mapping system, indicating areas and populations, including at local level, affected by or at-risk of hunger and malnutrition, and elements contributing to food insecurity, making maximum use of existing data and other information systems in order to avoid duplication of efforts...."

Commitment Seven, para 59 (b) states that "governments, in cooperation among themselves and with international institutions, using information on food insecurity and vulnerability, including mapping, will encourage relevant agencies within the UN system to initiate, inter alia, within the framework of the ACC, consultations on the further elaboration and definition of a food insecurity and vulnerability information and mapping system to be developed in a coordinated manner. Member countries and their institutions and other organizations, as appropriate, should be included in the development, operation and use of the system...."

**What is a food insecurity and vulnerability information and mapping system?**

A food insecurity and vulnerability information and mapping system is any system or network of systems that assembles, analyses and disseminates information about people who are food-insecure or at risk: who they are, where they are located, and why they are food-insecure or vulnerable. The World Food Summit negotiations produced this name from an original proposal made by several Latin American countries which called for the use of “hunger maps” – a far more evocative but politically sensitive and somewhat ambiguous term and concept. It is noteworthy that the negotiators deliberately decided not to capitalize the initial letters of the words used for this concept, precisely to avoid giving the impression that a heavy new system was being created.

**What is the FIVIMS initiative?**

FIVIMS is a framework within which a wide range of activities may be carried out, at both the national and international levels, in support of improved information to help achieve World Food Summit goals. At the national level, it is implemented through a network of information systems that gather and analyse data relevant to the measurement and monitoring of food insecurity and vulnerability; such a network of information systems may be referred to as a national FIVIMS. At the international level, it is implemented through a programme of activities, generally referred to as global FIVIMS. The idea behind FIVIMS is that improved information can be used to produce better results from efforts to reduce the number of undernourished and achieve food security for all. The acronym FIVIMS (in English – SICIIV in Spanish and French) refers to the overall framework and the concepts and ideas associated with it, and not to any one particular system or network of systems.

**Should national food insecurity and vulnerability information and mapping systems be called FIVIMS?**

Strictly speaking, the answer to this question is “no”. However, as long as national information systems are playing their role in the struggle against food insecurity and malnutrition, they can be called whatever decision-makers judge appropriate. Existing national organizational units that manage the FIVIMS functions would still be referred to as FIVIMS focal points within the context of the World Food Summit commitments.

more comprehensive information that is up-to-date and easy to interpret, in order to enhance food security policy formulation, improve the design and focus of interventions directed towards reducing food insecurity and vulnerability and facilitate the monitoring of progress in achieving these goals, through providing specific and precise information about the nature and extent of food insecurity and vulnerability, the underlying causes and the changes that are occurring over time.

The **immediate objectives** of FIVIMS are to:

- increase national and international attention to food security issues, so that they receive higher priority in policy formulation;
- improve the reliability, quality, quantity and timeliness of national and subnational food security-related data and analysis;

- facilitate multisectoral analyses, through better integration of complementary information components;
- promote better use of information, through better understanding of users' needs and more effective dissemination;
- improve users' access to information, through networking and sharing.

## PRINCIPLES GUIDING NATIONAL-LEVEL FIVIMS IMPLEMENTATION

Eight principles underlie the present approach to the strengthening and consolidation of national FIVIMS. They can be summarized briefly as follows:

- **Recognize that needs differ across countries.** National FIVIMS operate in different biophysical, social, economic and political environments, and have different purposes, strengths and weaknesses. No single approach or set of best practices can be applied. Rather, best practices will need to be screened, selectively applied and adapted to specific country situations.
- **Identify and respond to users' information needs.** To ensure sustainability, FIVIMS must be demand-driven. The types of information, methods of analysis and range of products must correspond to the priorities of the major user groups. Determining who the users are, and identifying their priority needs through dialogue, is the starting point for implementation.
- **Build on existing information systems and avoid/reduce duplication.** Most countries have invested in the establishment of a variety of information systems that are already producing useful data. The FIVIMS initiative does not imply the introduction of an entirely new activity, but rather the consolidation and strengthening of these ongoing efforts.
- **Practise incremental implementation methods.** Improvements can often be most effectively introduced in a sequence, depending on national priorities and resources and building on lessons learned as the process continues.
- **Integrate household-level analysis and gender-disaggregated information into national and subnational policy-making.** Recent evidence from a range of country situations demonstrates convincingly the importance of gender-based factors in influencing the nutritional outcomes of key vulnerable groups at the household level. Good information at this level may require new approaches and additional resources, but the potential pay-off through improved decision-making is high.
- **Promote institutional sustainability.** Self-reliance in the strengthening of national FIVIMS is critical for success. Reliance on external financial and technical assistance is to be minimized. The consolidation of political commitment is crucial to ensure that the necessary resources are made available to the effort and that cross-sectoral integration occurs.

- **Promote cost-effectiveness.** Priority must be given to making existing information systems more efficient, identifying and promoting potential complementarities among them, and eliminating duplication in services and activities.
- **Make appropriate use of new technologies.** New computer-based technologies are available that can significantly improve analytical efficiency and the effectiveness of communicating results. Each country should carefully examine the new technologies and select those that can improve operational efficiency and meet national objectives within the existing resource constraints. ●

## Expected benefits and main users

### EXPECTED BENEFITS

By supporting the development of national information system activities and raising the awareness of policy-makers and other concerned members of civil society about the plight of the food-insecure and the vulnerable, the FIVIMS initiative is expected to generate the following immediate benefits:

- improved policy formulation;
- improved programme management;
- more effective design and focusing of interventions;
- more effective intersectoral and interinstitutional dialogue.

In a number of countries, improved information has already led to the introduction of new legislation and the formulation of specific programmes directed towards food-insecure and vulnerable population groups. Such policy decisions are expected to result in an overall reduction of the specific problems associated with undernutrition, as illustrated by the cases of Eritrea and Zambia presented in this chapter.

### MAIN USER GROUPS

The information and reports generated through national FIVIMS will be useful to several groups of people across different sectors of society. Main user groups may include the following:

- **Policy-makers and their advisers in government (at the national level)** who can direct funds and services to food-insecure and vulnerable groups, the Office of the President or the Prime Minister (especially if food security units are already located here), ministries of finance and planning, and line ministries dealing with agriculture, environment, fisheries, forestry, health and land.
- **Government officials and technical staff at the national and subnational levels** (provinces and districts) who are directly involved in food security and nutrition research, planning, interventions or monitoring.
- **Local government authorities** that are responsible for the day-to-day management of food security and nutrition interventions.
- **Civil society**, specifically those (members of NGOs and community-based organizations) who are engaged in tackling problems of food insecurity within their countries, and other actors in the private sector who provide services to the producers and consumers of food.
- **The donor community**, including UN agencies, bilateral donors and international NGOs that are involved in food security and nutrition issues at the national and international levels.
- **Researchers**, including academics at local and international universities and

research institutes, statisticians at the national statistics office, and others who are interested in food security and nutrition issues.

- **Training institutions**, particularly those involved in providing cross-disciplinary training in the management of food insecurity and vulnerability information systems to people who are already specialized in such disciplines as statistics, meteorology, geography, cartography, agricultural economics, sociology and nutrition. ●

## Eritrea



### A nutrition survey on micronutrients leads to key policy decisions

In 1994, a National Nutrition Survey was conducted in Eritrea, with a focus on micronutrients (iron, vitamin A and iodine). The survey included anthropometric measurements of children under five years of age, pregnant women and schoolchildren. The following were some of its main findings:

- Iodine deficiency disorders (IDD) were found to be a major nutrition problem among schoolchildren.
- Vitamin A deficiency among infants was not as high as in other developing countries. (This was partly explained by the habit of Eritrean mothers to breastfeed their children until they are at least two years of age.)
- Most pregnant women were found to be iron-deficient (anaemic).

After they had been analysed, the National Nutrition Survey data were presented to policy-makers. In response to the problems identified in the report, the following actions were taken:

- **Iodine deficiency.** The Ministry of Health, in collaboration with the United Nations Children's Fund (UNICEF), promoted the iodine enrichment of salt produced near the coastal regions of Massawa and

Assab; all salt producers were equipped with the necessary machinery and fully trained in its use. (This initiative was supported by legislation.)

- **Vitamin A deficiency.** The Ministry of Health supplied vitamin A tablets during the polio immunization campaign of December 1997; another distribution of vitamin A tablets took place in May 1998.
- **Iron deficiency.** The Ministry of Health supplied iron tablets to anaemic pregnant women through hospitals and local clinics.

In order to monitor progress towards the control of micronutrient deficiency, a second survey will take place in the near future, using the first National Nutrition Survey as a benchmark. The scope of the next survey will be enlarged, in that levels of micronutrients present in the milk of breastfeeding mothers will also be measured.

## Zambia



### New policy decision based on lessons learned from sugar fortification

Vitamin A deficiency is a well-recognized public health problem in Zambia. Among the short-term interventions promoted by the National Food and Nutrition Commission are supplementation and fortification of basic foodstuffs. Sugar was selected as the primary vehicle for Vitamin A fortification on the basis of a success story from Guatemala. However, although sugar is assumed to be consumed widely in Zambia, at the time the decision was made to fortify it there was no information on the extent of sugar consumption, so it was difficult to determine whether the programme would be reaching the target population groups.

**New information.** The Food, Health and Nutrition Information System (FHANIS) responded to the lack of information by including a question on sugar consumption in one of its regular surveys. The results showed that, whereas more than half (53 percent) of urban households consumed sugar, less than one-third (29 percent) of those in rural areas did. The new information on sugar consumption also highlighted the fact that sugar was consumed mainly by the higher-income groups in both the urban and the rural districts, and that the least sugar was consumed in those provinces where vitamin A deficiency was actually the highest.

**Policy response.** Vitamin A capsules are now given to children in poorer areas (as a more effective way of reaching them than sugar fortification).

An initiative has also been taken to fortify maize meal, which is the main staple food in Zambia. However, the maize meal used by the rural population is processed locally, either by hand or with small hammermills, rather than in the large mills through which fortification may be possible. Hence, it is expected that, as with sugar

fortification, the target groups will not be reached. Cassava meal is a more important staple in those provinces where the Vitamin A-deficient population groups live.

Based on the above information, increasing the production and consumption of foodstuffs that are naturally rich in vitamin A is now seen as the most sustainable way of improving dietary intake of vitamin A

## Products **TYPICAL INFORMATION PRODUCTS**

Each country is unique with respect to the nature of its food security problems and, thus, the information products needed to address them will also differ. Since the primary aim of a national FIVIMS is to aid national and local decision-makers, it must provide products that respond, first and foremost, to their priority needs, which are determined by the specific circumstances of each country or district. Hence, the data that a national FIVIMS will assemble, the objectives and methods of its analysis and the products that it develops and disseminates will ultimately depend on who will use them, and for what specific purposes. Although the content of the products is determined by users' needs, some typical products might include those described in the following subsections.

**Baseline information.** In order to provide an initial guide for national programming and to establish benchmarks for monitoring progress towards achieving Summit goals, an initial assessment of food insecurity and vulnerability in the country is needed.

In many countries, an up-to-date assessment of the food security situation may have been carried out and reported in published documents in preparation for the World Food Summit, or immediately thereafter. There is no need to repeat this work. In other countries, much of the information needed for establishing the baseline will already be available, either in recent assessment reports or in existing databases and survey reports that are still current. However, a FIVIMS baseline information report that summarizes this information will usually be needed. The information can be compiled and presented in the form of summary tables, charts and maps, and should not involve the writing of very lengthy or academic reports. Baseline information reports will generally need to be updated at least once every ten years.

**Monitoring reports and situation assessments.** Monitoring reports interpret the key indicators that are regularly followed by various national and subnational data collection systems for a range of purposes. Monitoring reports are meant to signal adverse movements in medium-term trends or warn of impending shocks to the food system at the national or subnational level. Reports containing the latest assessment of the current situation should be released at regular intervals that correspond to users' needs within the country, as well as to any reporting requirements that may be established by the CFS, and that are in line with World Food Summit commitments.

The frequency of data collection and reporting is influenced by cost as well as users' needs. Monitoring reports and current situation assessments are generally required at regular intervals, at least yearly (and even more frequently for early warning reports). Data that are difficult and more costly to collect may be updated at less frequent intervals. A schedule for the periodic updating of more costly types of data should be established; and in-depth assessments covering a broader range of data than the monitoring indicators can be prepared at the same time, perhaps every three to five years. In-depth situation assessments are likely to give a more complete picture of the changes occurring in the underlying causes of food insecurity and vulnerability than



that provided by annual monitoring reports. Periodic in-depth assessments may also serve to update the baseline information against which progress is being measured and, when appropriate, to establish new reference points for future monitoring.

**Policy and programme evaluations and feasibility studies.** Evaluation studies provide ex-post assessments of the impacts of policies and programmes on reducing food insecurity and vulnerability; whereas feasibility studies provide ex-ante estimates of the future costs and benefits associated with alternative policies and interventions. Such studies provide information that is essential to ensuring the most efficient use of scarce public resources in food security programming. At the subnational level, for example, the results of such studies can guide the formulation of participatory community action programmes. At the national level, information can help in the design or reorientation of national food assistance programmes (in the short term) and broader national food security policies and programmes (in the longer term). At both the local and the national levels, information from such studies is critical when formulating requests for external assistance. At the global level, information from policy studies can guide the programming of investments, technical assistance and international food aid. Such studies will generally be produced as the need arises.

## **MAPPING TECHNIQUES AND GIS**

Advances in computer technology have made possible the use of mapping techniques, in particular GIS, to analyse and present complex food insecurity and vulnerability information in ways that greatly facilitate understanding and decision-making. Maps generated from georeferenced data can provide easily understood visual information about the location of food-insecure and vulnerable population groups and geographic areas. Once these locations have been mapped, a wide variety of other data relevant to understanding and monitoring the food and nutritional status of vulnerable people can be overlaid on the base maps. These techniques can communicate a large amount of information in a simple format, and can also be used as an analytical tool. A range of user-friendly GIS tools is now available for use on affordable personal computers. Investment in appropriate hardware and software, and training of national technicians in their use, will be essential components of modern and effective national FIVIMS.

## **EFFECTIVE PRODUCT DISSEMINATION: CRITICAL FOR IMPACT**

Information by itself is of no value unless it reaches those who need it, can be easily understood and is actually used. National information systems must develop dissemination plans and approaches that ensure that these conditions are met. A starting point is a user needs assessment to ensure that decision-makers' real information needs are correctly identified. The participation of decision-makers in the preliminary stages of planning for various types of surveys will also be useful in providing input and conferring a sense of ownership in the final results. Reports should then be prepared that keep in mind the specific needs, interests and perspectives of the appropriate target users. For most users, long reports containing a large amount of

data and information and covering a wide range of topics are less effective than shorter theme-specific reports that address the particular interests of one type of user.

The way in which information is presented is also critically important. Data analyses should be fully transparent and easily understood. Results should be attractively presented in ways that facilitate the drawing of conclusions. To this end, maximum use should be made of well prepared and clearly designed graphs and maps that communicate patterns and complex relationships in ways that can be grasped quickly by policy-makers. Depending on the technological capacity within the country, media other than printed documents (such as radio, posters, town meetings and computer networks) may be used to communicate information and reports generated by national FIVIMS. Workshops to present and discuss results with subsets of users can be an extremely effective means of helping decision-makers to interpret and internalize results and their implications for policy. ●

## Steps to institutionalization

A number of steps may help to strengthen national information systems within the FIVIMS framework in such a way that permanent national institutions are reinforced and political commitment to ensure sustainability is mobilized. A series of actions that can be implemented as appropriate, depending on the conditions in particular countries, are set out in the following subsections. Not all the steps need be applied in a strict sequence, nor need they all be applied in every country.

### **BUILDING AWARENESS**

In countries where policy-makers are not yet fully aware of the need for strong food insecurity and vulnerability information systems, an effort should be made to sensitize them to the nature and potential benefits of such systems. This step is essential in establishing the political commitment necessary for success. A variety of means can be used. High officials in ministries concerned with food security, as well as those responsible for broader development planning and resource allocation, can be briefed individually to ensure that they understand how information products can be of direct value to their work. Sensitization workshops involving key representatives of concerned ministries can also be useful to foster the formulation of an official national policy, and to reach agreement on the need and mechanisms for close cross-sectoral and interministerial cooperation in the sharing of key data and information.

### **IDENTIFYING A NATIONAL FOCAL POINT**

There is a need to designate a national focal point who can play a catalytic and/or coordinating role in initiating the implementation of FIVIMS activities. Subsequently, the focal point should arrange the management of any shared FIVIMS database networks that may be established, the production of consolidated FIVIMS reports and the maintenance of relationships with relevant international organizations and databases.

Selection of the focal point is a strictly national decision and should be based on considerations of effectiveness. Countries may designate a person, an existing information unit or a government department. In making the selection, countries should consider that the focal point will need to have the authority to communicate officially with, and obtain the cooperation of, a number of different information systems operated by different line ministries, independent government departments, NGOs and private sector organizations. Thus, rather than selecting a focal point from among line ministries, countries may wish to place the focal point functions in a unit or department that traditionally works on cross-cutting, interministerial issues, such as the Office of the President or Prime Minister, the Planning Ministry, the Ministry of Finance or the Central Statistics Office.

### **ESTABLISHING A NATIONAL FIVIMS NETWORK**

The first task of the focal point may be to establish a collaborative network involving all the operating systems of those units that produce or use data and information of relevance to FIVIMS. The purpose of the network will be to facilitate the exchange of

information, planning and cooperation on an ongoing basis. Although it would not be necessary to establish a new institutional structure requiring additional resources, at a minimum the network needs to establish rules of procedure for decision-making and reporting and participants should have the authority to speak, on behalf of their respective institutions, on food security information issues.

### **CONDUCTING A USER NEEDS ASSESSMENT**

An early responsibility of the network may be to conduct an assessment of users' information needs. The purpose of the assessment will be to identify and prioritize the major types of information required by different users and their preferred periodicity and format. The assessment can be carried out through group meetings, individual interviews or questionnaires. It is important to ensure that all potential user groups at the national and subnational levels are given adequate opportunity to articulate their needs. To obtain an accurate and complete list of the needs of potential users who have not previously had access to usable information, it may be necessary to undertake several rounds of meetings or interviews in order to identify the types of information that would be most useful. As the national FIVIMS is developed further, the focal point should obtain periodic feedback from users, in order to monitor the progress being made and identify areas where further improvements can be introduced.

### **CARRYING OUT AN INVENTORY AND EVALUATION OF NATIONAL DATA AND INFORMATION SYSTEMS**

Once the information needs of key food security decision-makers have been identified and prioritized, the network could conduct an inventory of the available data and information, and evaluate the extent to which current information systems meet those needs. An evaluation might consider the range of data and information types, their coverage, periodicity, quality, data management procedures, analytical methods and dissemination approaches. Results of the evaluation would identify significant gaps or weakness in meeting priority information needs and point out areas where there may be duplication of effort and where collection of low-priority information might be terminated. The evaluation should include aspects related to data collection, management, analysis and dissemination.

### **PREPARING A NATIONAL FIVIMS STRATEGY AND WORK PLAN**

Results of the user needs assessment and the inventory and evaluation of the current information systems will serve as building blocks in the development of a strategy to improve the national information systems within the FIVIMS network. The strategy should define a priority set of information required by national decision-makers and a set of verifiable objectives. A national work plan would then set out a scheduled programme of initiatives and activities to meet those objectives. Actions might include institutional changes to achieve greater information integration within and across sectors and ministries, use of new technology and methodologies, human capacity building, and investments in new equipment and software. Initiatives in the areas of data collection, management, analysis and dissemination should all be

considered on the basis of results of the evaluation. The plan should be designed in modules or increments such that higher-priority actions could be taken in a logical sequence as resources permit. Domestic resource requirements implementing the plan, and priority areas in need of external assistance, should be identified.

### **BUILDING POLITICAL COMMITMENT TO ENSURE SUSTAINABILITY**

For FIVIMS activities to survive, they must receive the commitment of key political decision-makers who will provide adequate and continued support. To obtain such commitment, they must in the first instance produce useful and usable information products that help to convince political decision-makers to support the information system. However, good work alone may not be sufficient, unless it comes to the attention of key decision-makers. The agenda of the national FIVIMS network must include, not only the maximization of information quality and usefulness (supply side considerations), but also specific strategies for the building and reinforcing of demand for good information products. The well-focused dissemination of well-presented products to key decision-makers and other potentially influential information user groups can contribute significantly to this end. Complementing the dissemination of published products with timely, focused and publicized workshops that involve important decision-makers and other user groups can significantly reinforce such support.

### **ESTABLISHING LINKS WITH GLOBAL FIVIMS**

Most national governments already provide much FIVIMS-related data and information to international institutions, as part of well-established cooperative agreements. As a global FIVIMS begins to be established, there may be requests for small quantities of additional data that will assist in the better monitoring of progress towards the attainment of the objectives of the World Food Summit and other international agreements. In addition, as national information systems are strengthened, national governments will have better information that can be transmitted as part of normal reporting. The exact nature and configuration of the global FIVIMS is still being planned and debated, but it is likely that it would assemble and analyse a subset of the indicators being generated by the national FIVIMS networks, which would be common across countries. This would permit intercountry analyses and comparisons in accordance with guidance from the CFS. It is unlikely that this will require governments to establish a new reporting channel for special FIVIMS information. Rather, most (if not all) FIVIMS information will probably flow through existing links to the current holders of international databases. ●