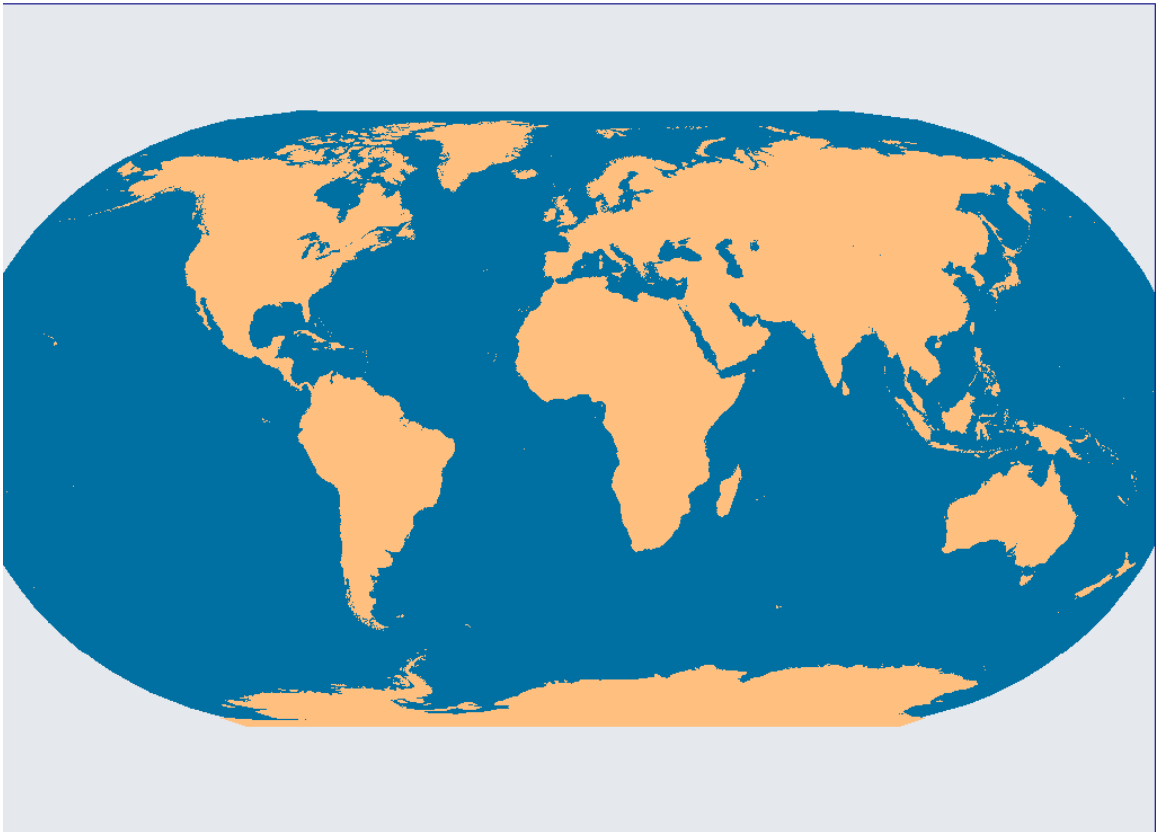


# **A PROPOSAL TO DEVELOP A NUTRITIONAL MEASURE OF FOOD AID FLOWS**

International Food Aid Information System  
**INTERFAIS**

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OF FOOD AID FLOWS**

WFP/INTERFAIS

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## EXECUTIVE SUMMARY

Food aid has traditionally been measured in physical quantities (metric tonnes) and in value terms (Euro/ US Dollars). In recent years, the interest to measure the nutritional value of food aid flows has been increasingly expressed. This is partly due to the need to improve commitments and reporting under various international agreements/organisations and partly related to the concern to improve the quality of food aid interventions by ensuring their adequacy to meet the requirements of food aid recipients. The increasing emphasis in addressing food insecurity and subsequently in improving the measurement of food aid in quality terms also results in the rising attention paid to micronutrients in the fight against malnutrition.

Measuring the nutritional value of food aid flows implies first to have detailed and reliable information on worldwide food aid flows and second to have equally reliable information on the nutritional contents of the commodities delivered as food aid.

WFP is well positioned to develop such a measure. WFP delivers more than 50 percent of the global food aid and it “houses” the International Food Aid Information System (INTERFAIS) which owns the only comprehensive database on worldwide food aid flows.

This project involves a comprehensive review of the literature on food commodities nutrient content with particular reference to micro-nutrients that have been less emphasised than macro-nutrients; it implies a full review of the different sources of information concerning data on food commodities nutritive content. The project also foresees a selection of data, most adapted to food aid, reflecting the nutritive value of food commodities.

The exercise will require the enhancement of the existing INTERFAIS database in order to include, for each commodity used as food aid, the nutrient contents; thus allowing for reporting food aid flows in nutritional terms. In order to ensure easy access by all stakeholders and food aid actors to data related to food aid flows and their nutritive value, the project also foresees the enhancement of the INTERFAIS reporting facilities by developing a data extraction facility to be available on-line to the international community.

Various international and non-governmental organisations involved in this problematic will be consulted at all stages of the project. The project includes the review and development of a composite index or reference value of the nutritional value of food aid to be reviewed and validated by an international seminar to be attended by food aid and nutrition experts and practitioners.

Measuring food aid in nutritional terms will provide new opportunities to improve resource allocation and programming, to increase awareness of nutritional challenges being faced by the recipient world and to enrich the analysis of trends in global food aid flows. Nutritional value analysis brings a quality dimension to the provision of food aid by making it more recipient-oriented.

# **1 HISTORICAL AND INSTITUTIONAL BACKGROUND**

Historically, food aid has been expressed in various units. Originally, it was only measured in quantities. Subsequently, it has been expressed in value terms. Recently, the relevance of accounting for food aid in nutritional terms has been increasingly highlighted.

## **1.1 Food aid measurement: From quantity to value**

Food aid originated mainly from the availability of surpluses in agricultural food commodities in a number of developed countries following the Second World War. Sometimes these surpluses represented significantly large quantities, but they were always perceived as quantities. Hence, food aid was initially pledged, committed and accounted for in quantities, usually metric tonnes.

During the late 1970s and the 1980s it appeared important to identify specific budgets to pay for these agricultural commodities. In addition, food aid started to be provided through purchases on international markets. It was necessary, therefore, to introduce, more formally, the value element to quantify the cost of the food commodities used as food aid. As a consequence, various institutions asked their members to report food aid in value terms, rather than in tonnes.

First, the FAO Consultative sub-Committee on Surplus Disposal (CSSD), established in 1954, originally required its members to provide notifications specifying the quantities of commodities provided as food aid. Subsequently its members were also asked to notify the value in addition to the quantity.

Second, the Food Aid Convention, first signed in 1967, established the Members' obligations in metric tonnes. It was only in 1999 that it offered its Members the possibility to express their commitments either in quantity or in value, or in a combination of tonnage and value. The 1999 convention also introduced a commitment expressed partly in euro, as until then the reference value had been the US dollar.

Third, the Immediate Response Account (IRA) established by WFP during the 1990s has had an objective expressed in value since inception.

Fourth, the Development Assistance Committee (DAC) of the OECD, established in 1960, adopted the Official Development Assistance (ODA) concept in 1969. The DAC requested its members to provide increasingly complex data on their ODA, including food aid expressed in monetary terms.

Despite these developments, some institutions remain focused on quantities. For example, the 1974 World Food Conference recommended that 10 million tonnes of cereal food aid be approved each year. And the International Emergency Food Reserve (IEFR), established in 1976, had an objective of 500,000 tonnes of cereals per year.

During the 1980s and the early 1990s, and in particular on the occasion of the 1983/85 drought in Africa and 1992 drought in Southern Africa, the UN organised important pledging conferences. At these conferences, the needs were presented by different UN and Non Governmental Organisations (NGOs) in tonnes of food commodities and expressed in grain quantities. The donors, however, announced their answers or pledges most of the time in value. WFP's INTERFAIS was requested on several occasions to translate the donors' pledges of US dollars or other currencies into tonnes. This turned out to be a complex and an imprecise exercise. It was only in the late 1990s that INTERFAIS developed a methodology to provide an estimated monetary value of global food aid and provided estimates of this value.

## **1.2 Food aid measurement: From value to quality**

Many of the food aid actors have worked hard throughout the second half of the 20<sup>th</sup> century to improve the quality of food aid. The quality of food aid is partly dependent on the commitments taken by donors to provide adequate food commodities. The monitoring of donors' actual provision of adequate commodities is undertaken through various reporting and monitoring tools. Monitoring the quality of food aid requires the capacity to capture some elements linked to the nutrient composition of the commodities. An interesting consequence of the concern to improve the quality of food aid appears in the wording of the 1999 Food Aid Convention (FAC). Article IV paragraph (c) of the 1999 Food Aid Convention reads:

*“For the purposes of fulfilment of their commitments, members may provide micronutrients in conjunction with eligible products. They are encouraged to provide, when appropriate, fortified food aid products, particularly in emergency situations and targeted development projects”.*

It has been, however, virtually impossible to monitor the provision of micronutrients and fortified food products within food aid flows because of the lack of available data. WFP, the largest deliverer of food aid (about 50 percent of global food aid in 2006) and the leading purchaser of fortified and blended foods for food aid, does not systematically collect information on micronutrients as such. Further to experience and research, WFP has established a very precise checklist of specifications on what should be the micronutrient content and fortification standards of the food commodities used as food aid for various population needs. This list is utilised when purchasing food aid commodities. It also contributes to capacity building when procurement or fortification is carried out locally.

Even though WFP has its own specifications, it is sometimes held to meet national legislation, which may indeed vary from country to country albeit not all countries have national policies on fortification standards. Where local fortification is practiced, WFP enforces adherence to the specifications by insisting on the use of vitamin and mineral premixes that are purchased from reputable suppliers as it is highly expensive to conduct laboratory analyses of micronutrient composition of foods post production.<sup>1</sup>

Nonetheless, WFP conducts random independent laboratory analyses at country level, to measure the actual nutritional content of the food commodities that are distributed to the recipients. However, this information is not easily available and in most cases it is retained at the country level for local utilisation.

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<sup>1</sup> WFP, Food and Nutrition Handbook, page 16

Tracking micronutrients within the food aid flows remains critical among donors' concerns. On the occasion of the tentative renegotiations of the 1999 Food Aid Convention in 2003, a number of members of the convention noted that the commitments and reporting system under the Convention were not satisfactory. In its comments to the Secretariat of the International Grains Council (IGC) the European Community (EC) noted that:

*"The Convention requires that members' food aid contributions are reported as wheat equivalent quantities. This leads to difficult and complicated conversion formulae, requiring information on multiple elements not always easily available. Some types of food aid cannot be converted into a wheat equivalent and are therefore not allowed to be reported as members' contributions thus leading to incomplete reports. In addition, the conversion of value commitments into wheat equivalent hides the real value of food aid contributions and results in misleading reports".*

Although no member at that time specifically referred to the nutritional aspect, most members agreed on the weaknesses of the existing monitoring/reporting system. Some members suggested that the expression of the Commitments and the monitoring of their fulfilment should be closely linked to the requirements of the beneficiary. As a result of this it was recommended that research should be undertaken to express food aid in a unit of measure that would be linked to its nutritional value and that would come in addition to the traditional measures in metric tonnes and monetary value. INTERFAIS was approached by several member states to provide assistance in this respect.

NGOs have also expressed the need for a more qualitative approach to measuring food aid flows. In September 2006, a number of NGOs grouped in the Trans-Atlantic Food Aid Policy Dialogue forwarded, to the Members of the Food Aid Convention, a proposal for a renewed Food Aid Convention. This proposal suggests that reporting under the Convention should *"include data on quantity, quality, appropriateness and timeliness of the food aid provided"*.

The increasing emphasis on the nutritional quality of food aid is also manifested at the national level. One such recent example is the United States of America, the largest global food aid donor. The U.S. Government Accountability Office (GAO) produced a report which states, among its findings, that *"Impediments to improving the nutritional quality of U.S. food aid, including a lack of an interagency mechanism to update food aid products and specifications, that may result in recipients not receiving the most nutritious or appropriate food..."* are among the important factors that contribute to the inefficiencies in the US food aid programmes.<sup>2</sup>

### **1.3 Increasing emphasis on micronutrient malnutrition**

Malnutrition is "the state of being poorly nourished – is not merely a result of too little food, but of a combination of factors: insufficient protein, energy and micronutrients, frequent infections or disease, poor care and feeding practices, inadequate health services and unsafe water and sanitation ... it is an 'invisible' emergency because, much like an iceberg, its deadly menace lies mostly hidden from view".<sup>3</sup> Under-nutrition is "the result of under-nourishment, poor absorption and/or poor biological use of nutrients consumed in the form various food items."<sup>4</sup> Malnutrition is

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<sup>2</sup> The United States Government Accountability Office, 2007, GAO-07-560 Foreign Assistance.

<sup>3</sup> UNICEF, The Big Picture, [http://www.unicef.org/nutrition/index\\_bigpicture.html](http://www.unicef.org/nutrition/index_bigpicture.html).

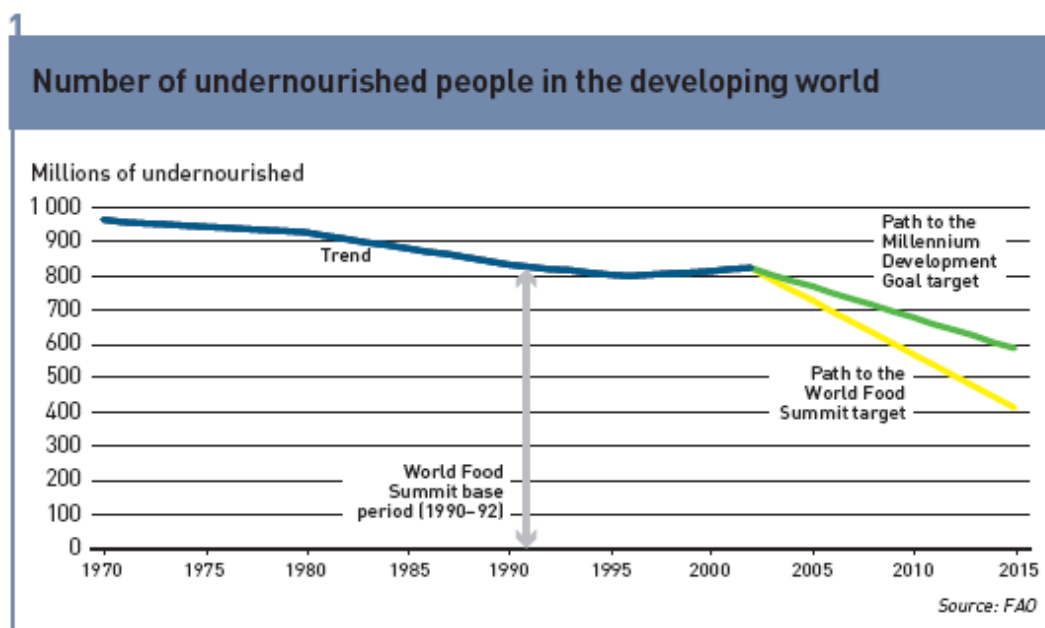
<sup>4</sup> FAO, FIVIMS Glossary at <http://www.fivims.net/>

a serious problem around the world. According to FAO, even though world food output has increased over the past years, there are still 854 million undernourished people in the world.

FAO's "The State of Food Insecurity in the World" (2006 ) shows that as of 2001-2003, the number of undernourished people has decreased in Asia and Latin America, while in the rest of the developing world the numbers have increased from the 1990-92 levels. However, in the majority of these countries, food availability, measured in terms of dietary energy supply in kilocalories per person, has increased for the same period.

Very minimal progress seems to have been attained in reaching the targets of the 1996 World Food Summit Plan of Action "reducing the number undernourished people to half their present level (1996) no later than 2015" and of the First Millennium Development Goal, "Reduce by half the proportion of people who suffer from hunger by 2015" (MDGs) (see Figure 1).

**Figure 1: The Number of Undernourished People in the Developing World**



Source: FAO, *The State of Food Insecurity in the World*, 2006

The United Nations 2005 Millennium Development Goals Report states that "*Chronic hunger — measured in terms of the proportion of people lacking the food needed to meet their daily needs — is on the decline. The percentage of people with insufficient food was lower in 2000–2002 than in 1990–1992 in all regions except Western Asia. However, progress has slowed over the past several years, and the number of people going hungry increased between 1997 and 2002*".<sup>5</sup>

Nevertheless, it is increasingly becoming apparent that the main cause of malnutrition in the developing world is not famine or lack of food. Most cases of malnutrition are due to micronutrient deficiencies. This results from the unfavourable conditions in which the poor

<sup>5</sup> United Nations, *The Millennium Development Goals Report*, 2005

people earn their livelihood and work towards reduction of poverty combined with debilitating effects of infectious diseases and lack of care and inadequate food baskets. The first Millennium Development Goal highlights this by combining reduction of poverty and hunger in one goal – indicating that reducing poverty spurs the reduction of hunger. The two are interlinked albeit not as in cause and effect, but as Sen observed “*famine implies starvation but not vice versa and starvation implies poverty, but not vice versa*”.<sup>6</sup> According to FAO, “*people in the lower income brackets face a greater risk of malnutrition as they are less able to diversify their diets through consumption of more expensive animal foods, pulses and fruits and vegetables*”.<sup>7</sup>

More than 2 billion people worldwide are deficient in key vitamins and minerals. UNICEF affirms that almost one-third of children in the developing countries are malnourished – 150 million are underweight for their age and another 175 million are stunted in height due to chronic illness and poor diet. According to WHO, deficiencies of micronutrients, such as vitamin A, iron, iodine and zinc, have emerged in the last ten to fifteen years among the ten leading causes of death through disease in developing countries. In addition, micronutrient deficiencies have significant negative effects on physical and mental growth of children and adult labour productivity. The Micronutrient Initiative notes that “*Levels of mineral and vitamin deficiency that have no clinical symptoms, and that were previously thought to be of relatively little importance, can and do impair intellectual development, cause ill health and early death on an almost unimaginable scale, and condemn perhaps a third of the world population to lives lived below their physical and mental potential*”.<sup>8</sup>

Micronutrient deficiencies occur when people do not have access to naturally micronutrient-rich foods such as fruits, vegetables, animal products or fortified foods, usually because they are too expensive to buy or are locally unavailable. Micronutrient deficiencies also occur because people are not able, for one reason or another, to absorb the right micronutrients in the right quantities. Ensuring access and proper utilisation and creating the right environment for their absorption are critical as well. When people are sick, their requirements for nutrients increase while they often eat less. This is particularly the case in young children. Micronutrient absorption is also influenced by other factors, such as knowledge and practice, water and sanitation, hygiene and health care (e.g. the presence or not of worms), cooking methods and the individual’s physical state. Furthermore, in several cases some micronutrients are necessary in order that other micronutrients can be absorbed.

#### **Box 1 DEFINITIONS**

**Macronutrients** are substances e.g. proteins, carbohydrates and fats, that are required by the body in large amounts and available to be used for energy. They are measured in grams.

**Micronutrients** are substances, e.g. vitamins, minerals and certain others, that are required by the body in small amounts. They are measured in milligrams or micrograms.

**Food fortification** refers to addition of one or more essential nutrients to a food, whether or not it is normally contained in the food, for the purpose of preventing or correcting a

<sup>6</sup> Sen, A. 1981, Poverty and Famines, an Essay on Entitlement and Deprivation.

<sup>7</sup> FAO, 2002, Global Trends in Dietary Energy Supply from 1961 to 1999 – Paper prepared for the FAO/WHO/UNU Expert Consultation on Energy in Human Nutrition.

<sup>8</sup> Micronutrient Initiative and UNICEF, Vitamin and Mineral Deficiency: A Global Progress Report, undated, p. 3.

demonstrated deficiency of one or more nutrients in the population or specific population groups. All fortified food has to be carefully regulated, and the amount of vitamins and minerals added to specific food is usually set at a proportion of the individual's daily requirement (usually less than a third).

Source: FAO

**Dietary energy supply** expresses the food available for human consumption in kilocalories per capita per day. At the country level, it is calculated as the food remaining for human use after the deduction of all non-food consumption (exports, animal feed, industrial use, seed and wastage).

Source: FAO, *The State of Food Insecurity in the World, 2006*

**Dietary supplement** is a product taken by mouth that contains a "dietary ingredient" intended to supplement the diet. The "dietary ingredients" in these products may include vitamins, minerals, herbs or other botanicals, amino acids, and substances, such as enzymes, organ tissues, glandulars, and metabolites. Dietary supplements can also be extracts or concentrates, and may be found in many forms, such as tablets, capsules, soft-gels, gel-caps, liquids, or powders.

Source: U.S. Food and Drug Administration

Nutritionists have increasingly emphasized the importance of the quality of food and the micronutrient content. Several organisations, such as the Micronutrient Initiative, UNHCR, UNICEF, FAO, WFP, the Global Alliance for Improved Nutrition and others, have taken, often jointly, their call to heart. International agencies have been working with governments, national institutions and the private sector to fortify foods, improve diets and extend the outreach of vitamin and mineral supplements.

Furthermore, other international organisations such as WHO, WFP and UNICEF are jointly working together to address the issues of micronutrient deficiencies in particular with reference to populations affected by an emergency. In a joint statement, the three organisations provided recommendations to ensure that the micronutrient needs of people affected by an emergency are adequately met. In addition, UNICEF and WFP have joined hands (working with other organisations) in an effort to end child hunger and undernutrition in the Ending Child Hunger and Undernutrition initiative. Micronutrient deficiencies rank high among the problems being addressed in this initiative.

In 2004, WFP highlighted that "*the seriousness of the hidden hunger problem is increasingly reflected in WFP's operations and most of its ration-dependent beneficiaries currently face serious micronutrient problems*".<sup>9</sup> Thus, WFP has sought to enhance the nutritional value of its food aid by "*supporting the improved nutrition and health status of children, mothers and other vulnerable people*".<sup>10</sup>

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<sup>9</sup> WFP, Micronutrient fortification: WFP experiences and ways forward, WFP/EB.A/2004/5-A/2, 6 April 2004.

<sup>10</sup> Strategic Objective 3 of the Strategic Plan 2006-2009 - WFP/EB.A/2005/5-A/Rev.1

In May 2002, the General Assembly of the United Nations agreed that the control of key vitamin and mineral deficiencies should be one of the global development goals to be achieved in the early years of the new millennium. Specifically, the UN called for the virtual elimination of iodine deficiency by 2005; the elimination of vitamin A deficiency by 2010; and a reduction of at least 30 percent in the global prevalence of iron deficiency anaemia by 2010.<sup>11</sup>

Improving the nutritional value of food aid enhances its impact in terms of child growth, maternal health, weight of newborns and nutritional catch-up. This also has positive effects on the attainment of several of the Millennium Development Goals. Moreover, there is a general consensus that micronutrient interventions such as food fortification and dietary supplements require minimal costs per beneficiary because they can be easily added to existing health and nutrition programmes. Providing micronutrients was also rated very highly at the Copenhagen Consensus in 2004.<sup>12</sup> It was ranked at 8<sup>th</sup> position out of the 40 objectives.

In the race against time for the attainment of the Millennium Development Goals, the World Bank, in its report, “Repositioning Nutrition as Central to Development” reiterates that *“fortifying foods and providing vitamin and mineral supplements are inexpensive ways to address the widespread problem of micronutrient malnutrition. They can improve economic productivity and economic growth, enhance child and maternal survival, and improve mental development and intelligence in children ... the economic returns to investing in such programmes far outweigh their costs”*.<sup>13</sup>

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<sup>11</sup> UN General Assembly resolution, Twenty-seventh special session, agenda items 8 and 9, Plan of action B-Goals, strategies and actions, A/RES/S-27/2.

<sup>12</sup> Bjørn Lomborg (ed.), Global crises, global solutions, Cambridge University Press, 2004.

<sup>13</sup> The World Bank, 2006, Repositioning Nutrition as Central to Development – a Strategy for Large-scale Action, pp. 21 and 71.

## 2. DEVELOPING A QUALITATIVE APPROACH TO FOOD AID

### 2.1 The limitations of quantity measures

Despite the increasing attention paid to the quality of food, very little progress has been made on its measurement. Regarding the nutritional content of food, until now, only per capita dietary energy supply (DES) has been calculated by FAO.<sup>14</sup> DES alone, however, does not ensure food security (see box 2). It indicates adequacy in food supply in terms of kilocalories, but does not provide information on the nutritional balance. The emphasis on DES alone has led to an increased focus on supply of staples neglecting the overall nutritional balance of the food basket. In general, most poor countries, especially those that are often recipients of food aid, have diets that are characterised by a high proportion of cereals and less of quality protein and other nutrients, including micronutrients. The pressure is now on to shift this focus into the supply of a diverse range of foods to meet all the nutritional needs of the needy populations to combat malnutrition and achieve food security. In food aid, this may be achieved by providing a nutritional measure of the commodities provided as food aid in addition to the quantitative measure currently in place.

Establishing a qualitative measure of food aid in terms of nutrient content will provide a possibility of interpreting the nutritional balance of the foods provided in food aid and also serve as a tool for targeting and measuring availability and needs.

#### Box 2 FOOD SECURITY

At the World Food Summit held at FAO in 1996, it was agreed that: “food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food to meet their dietary needs and preferences for an active and healthy life”. The three components that are enshrined in this definition include availability, access and utilisation.

**Food availability** is the amount of food that is physically present in a country or an area through all forms of domestic production, commercial imports and food aid. Availability of food in sufficient quantities is ensured through production, trade and food aid.

**Food accessibility** is a household’s ability to regularly acquire adequate amounts of food through a combination of their own stock and home production, purchases, barter, gifts, borrowing or food aid. Food aid programmes, among other activities, play a significant role in ensuring accessibility to adequate food for vulnerable populations.

**Food utilisation** refers to the use that households make of the food that is available and the ability of the body to effectively absorb its nutrients. Proper utilisation of food is accomplished when the food available is nutritious and in a usable form, i.e. when the quality of food is coupled with the ability of the individual to physically absorb the nutrients.

**Food insecurity** exists when people are undernourished as a result of the unavailability of food, insufficient purchasing power, inappropriate distribution, or inadequate utilisation of food at the household level. It may be chronic, seasonal or transitory.

*Source: WFP, EFSA Handbook 2004*

<sup>14</sup> FAO, The state of Food Insecurity in the World, 2006

Over the years most food aid has been provided in cereal form compared to non-cereals (for example, 85 percent and 15 percent, respectively, in 2006, a year with a relatively high portion of non-cereal commodity delivered as food aid).<sup>15</sup> This results into most food aid being in the form of carbohydrates, providing less of other essential nutrients, such as protein, fats and micronutrients (vitamins and minerals), as not all cereals provided as food aid may be fortified or naturally rich in micronutrients. Moreover, the limited availability of information tends to suggest that many countries have sufficient supplies of macronutrients, but not of micronutrients.

At the global level, the situation and market of the main world food commodities is well known. The same cannot be said for micronutrients. Additional research is, therefore, required. At the national level, more efforts need to be directed towards the broadening of the food base and the diversification of the diets of the vulnerable groups of people. This can be achieved through fortification, dietary supplementation, production of a greater variety of naturally micronutrient-rich foods, and the proper monitoring of these activities.

## **2.2 Overall objectives and goals**

The main objective of the project is to provide the international community with an instrument that will permit a nutrition-oriented perspective in the implementation and reporting of food aid operations. The enhancement of the comprehensive INTERFAIS database base on worldwide food aid flows to include precise nutritional value of all food aid transactions will also facilitate the attainment of other goals.

First, it will increase awareness of the need to address micronutrient deficiencies and better equip the food aid actors to quantify and monitor such actions. Second, it will reinforce the tools available to food aid providers to better achieve the objective of food security. Third, it is expected to encourage donors to provide not just the quantities, but better quality food as well in order to achieve an increased contribution of food aid to food security, particularly through its utilization dimension.

Fourth, nutritional value analysis also provides a means for better allocation and targeting of the limited resources available for food aid. The monitoring of micronutrients is important to ensure protection from deficiencies and excessive consumption – hence proper utilisation. It will help to measure how much of a food must be provided to ensure that a certain nutrient level would be achieved.

Fifth, in order to ensure an easy access to all information related to worldwide food aid flows and the nutritive value of food aid commodities provided as food aid, the reporting facilities of the database owned by INTERFAIS will be enhanced to offer an online data extraction facility through the INTERFAIS web site.

Sixth, among the objectives of the project is the development of a composite index or reference value of the nutritional value of food aid to be reviewed and validated by international food aid and nutrition experts and practitioners.

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<sup>15</sup>WFP, 2005 Food Aid Flows, INTERFAIS

Seventh, such a reference value will enhance the comparison between food aid needs and food aid availability. Eighth, it will provide food aid donors with a valuable tool to develop appropriate monitoring and reporting systems under different international agreements. Ninth, it will allow an analysis of the trend of the composition of food aid over the years. Even though attention is increasingly being drawn to the qualitative aspects of food aid, there are yet no data to demonstrate this trend. In general, the data would provide an important source of information for analysis, policy-making and programming for other international organisations and national Governments.

## **2.3 Developing a quality measure**

The qualitative approach will be based on a methodology to monitor and/or report food aid flows using a nutritional quality measure. This will allow food aid actors to fully or partly base their food aid programming, monitoring and reporting on the nutritional value of the food aid provided.

It is expected that the composite index or reference value to be developed will be validated at an international seminar that will be held as part of the project. The index will be a representative value of the nutrient content of the specific food commodities analysed. The project will have to determine whether the composite index or reference value will include all nutrients or macronutrients and the most essential vitamins and minerals, such as iodine, iron, calcium, zinc, vitamin A, and C which will be based on their relative importance in terms of their effects on human nutrition. The project will also address the issue that the required amounts of the nutrients vary.

A composite index or reference value that will summarize the nutritional value of the commodities provided as food aid will be developed and reference will be made to existing research.<sup>16</sup> The development of such a composite index or reference value requires the following steps:

- Collection of data on the nutrient content and their relative recommended daily allowance of all food commodities provided as food aid and available in the INTERFAIS database (by looking at the most common micronutrient deficiencies it is possible to identify which micronutrients may be included in the index).
- Development of a methodology for the formulation of a composite index or reference value making sure that it captures the nutritional value the food aid commodities, in collaboration with nutrition experts from INRAN, FAO, WFP, UNICEF and other available organisations.
- Computation of a nutritional value index for all the commodities in the INTERFAIS database.
- Enhancement of the reporting facilities offered by INTERFAIS by making available, on-line, a data extraction facility through the INTERFAIS web site, enabling all those interested to extract information on food aid flows and their nutritional measure.

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<sup>16</sup> See, for example, Eliza M. Mojduszka, Julie A. Caswell, Dennis B. West, and J. Michael Harris, "Changes in nutritional quality of food product offerings and purchases: A case study in the mid-1990's", Economic Research Service of US Department of Agriculture, undated.

## 2.4 Data requirements

Data required for the calculation of the index will include:

- List of all the commodities available in the INTERFAIS database.
- Nutrient composition of all the food commodities available in the INTERFAIS database. Consultation will be sought from the nutrition experts from INRAN, FAO and WFP Nutrition Service for creating some categories that are generic to group the unidentified commodities (comparative analysis shows that the nutritional content of the various food items are not always equal. However, in many cases the differences are negligible).
- Fortification specifications of fortified commodities that are provided as food aid (refer to section 1.2 for more details on specifications).
- Recommended average daily nutrient requirements for individuals (men, women and children) and/or for the whole population. The project will include an inventory of the sources and an analysis of the availability of the various nutrients' requirement values and their differences from one source to another will be taken into consideration.

In view of the vast variety of food types and brands in the INTERFAIS database, more than one source of food composition table will have to be used for reference, taking into consideration compatibility and coherence. The following sources will be consulted:

First, the WFP's Nutrition Service, through the Nutrition Handbook, provides information on the various sources (food commodities) of these micronutrients as well as macronutrients. This information is used for composing food baskets in food aid programmes. The Nutrition Handbook also provides the Recommended Average Daily Requirements of several minerals and vitamins.

The Nutrition Service also, through "Nutval", provides a commodity list (specific to WFP) with their corresponding nutrient content per 100 grammes of edible product. Nutval is a web-based spreadsheet application developed for planning, calculating and monitoring the nutritional value of food rations. Nutval was developed in collaboration with the United Nations High Commissioner for Refugees (UNHCR). There are currently 145 food items available. However, Nutval does not contain a complete list of nutrients. Therefore its use will be limited to comparison of the nutrients currently present in it with those from other sources.

Second, in a joint effort with INFOODS of the United Nations University (UNU), FAO develops food composition tables with the goal of improving the quality and availability of food analysis data worldwide. Through their publications "compiling data for food composition data bases" and "Food composition data: Production, Management and Use", INFOODS and FAO provide guidelines and recommendations on the gathering, formatting and documentations for the compilation of food composition data bases.

Third, the guidelines jointly developed by UNHCR, UNICEF, WFP and WHO also contain valuable nutritional data more specifically related to food aid in emergencies.

*Table 1: “Nutval” food and nutrient database – 2006: Some food items and their nutrient content as they appear in the “Nutval” table*

Source: WFP

### 3. METHODOLOGY

The following activities will be carried out in the implementation of the project:

- Undertake a comprehensive literature review of material related to the nutrient content of food commodities identifying those more related to the commodities used as food aid. This review will give particular importance to the matters related to micro-nutrients as more work has been undertaken on macro-nutrients than on micro-nutrients.
- Ensure that sources of data selected offer coherence in terms of methodologies in the calculation of the nutrient content.
- Undertake comparative analysis of the various methods of reporting of nutritional contents of food commodities.
- Consult with the Nutrition Services in WFP, FAO and UNICEF, INRAN, NGOs, as well as other available nutrition experts from various organisations on the aggregation of the various INTERFAIS food commodities, which vary in terms of brands and varieties, into common food groups.
- Modify the INTERFAIS database on global food aid flows in order to insert additional tables to be linked to the commodity tables that are in the database. These additional tables will host data of the quantities of macronutrients and selected micro-nutrients corresponding to each commodity.
- Populate the above mentioned tables with the corresponding nutrient content, from the selected data sources, for each commodity available in the INTERFAIS database.
- Adjust the INTERFAIS database reporting system in order to generate reports using the data included in the new tables, taking into consideration the fact that this reporting facility will also have to be available through INTERFAIS web site for on-line data extraction.
- Review the changes to be made to the INTERFAIS database in order to redesign it and develop an online data extraction facility and implement such a facility in a way that should be compatible with WFP overall practice and technical choice in terms of reporting and information sharing.
- Review how to develop a composite index or reference value that would combine the different elements (nutrients) in order to establish one or several nutritional value(s) of the food aid commodities taking into consideration both macro- and micro-nutrients. In consultation with nutrition experts, available nutrients will be analysed to identify those that could be included in the index.
- Compute the index using the developed methodology for all the food commodities available in the INTERFAIS database.
- Organise an international seminar at which the proposed methodology for the computation of the possible composite index or reference value will be submitted for validation. Representatives of stakeholders from national, international and non-governmental organisations as well as food aid and nutrition experts will be invited to this seminar.
- Review the conclusions and recommendations of the international seminar and implement them.
- Produce a final report of activities of the project.

## **4. EXPECTED OUTPUTS**

The following outputs are expected from this project:

- An INTERFAIS food composition table complete with nutrient content of all commodities.
- A prototype database which will include the changes that will be made to the INTERFAIS database through additional fields hosting data of the quantities of the macro- and micro-nutrients corresponding to the food aid commodities present in the database.
- A redesigned INTERFAIS website complete with an on-line data extraction facility available to the international community.
- A composite index or reference value to express the nutritional value of the global food aid commodities.
- A discussion paper outlining the methodology of calculating and monitoring the nutritional value of global food aid including the findings.
- Preliminary estimates for the nutritional value of global food aid for the period 1990 to 2005 and their entry into the prototype database.
- An analysis of the nutritional value of food aid for the period 1990-2005.

## **5. TIMEFRAME**

The project will cover a period of 12 months after the signature of the financing agreement and will be coordinated by INTERFAIS according to the objectives and expected results. The funds needed are destined to cover the costs of the consultants required to do the food aid/nutrition related analysis and work and to expand the database owned by INTERFAIS in order to include data on nutritional value of the commodities used as food aid and to develop a data extraction facility as well as to cover the expenditure of the international validation seminar.

### **Details**

It is foreseen that the funds needed by the project will be used to cover the following expenditures:

1. Twelve months nutrition consultant for the entire duration of the project;
2. Twice six month nutrition consultants (2) for the comprehensive review of the literature and the preparation of the international seminar;
3. One database development specialist for six months to develop tables to host the nutritional value;
4. One data extraction/web specialist to develop the on-line data extraction facility; and
5. Organisation of the international validation seminar with about 15 persons being taken care of by the project budget plus documents, and miscellaneous.

## **ANNEX:**

### **Acronyms Used in the document**

CSSD	Consultative sub-Committee on surplus Disposal
DAC	Development Assistance Committee (of the OECD)
DES	Dietary Energy Supply
EC	European Commission
FAC	Food Aid Convention
FAO	Food and Agriculture Organisation
IEFR	International Emergency Food Reserve
IGC	International Grains Council
INFOODS	International Network of Food Data Systems (of UNU)
INRAN	Istituto Nazionale di Ricerca per gli Alimenti e la Nutrizione (National Institute of Research on Foods and Nutrition)
INTERFAIS	International Food Aid Information System
IRA	Immediate Response Account
MDGs	Millennium Development Goals
NGO	Non Governmental Organisation
NUTVAL	Nutrient Values (web-based database of WFP)
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNU	United Nations University
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WFP	World Food Programme
WHO	World Health Organisation

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**World Food Programme  
(WFP)**

**INTERFAIS**

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