

# **Executive Summary**

***“Children are the major repository of South Africa’s potential human capital for the future. The fact that children are the workers, scientists, parents, leaders and civil society participants of tomorrow means that their survival, health, nutrition and educational progress are key issues for reconstruction and development today”<sup>1</sup>.***

**Nelson Mandela, May 1996.**

Against the background of prevailing undernutrition and its coexistence with micronutrient malnutrition, the Directorate: Nutrition of the Department of Health, within the scope of its Integrated Nutrition Programme (INP), has included the development of guidelines for a national micronutrient food fortification programme as part of its strategic and operational plans. However, the formulation of such a national food fortification programme requires information regarding nutrient intake as well as the identification of suitable food fortification vehicle(s) which are consumed sufficiently frequently and in sufficient quantities by the target population, and which do not pose risks for toxicity. Additionally, it is well recognised that the successful implementation of any intervention programme depends, among other factors, on appropriate nutrition education. The paucity of such data on a national basis has, therefore, necessitated the proposed survey.

## **OBJECTIVES OF THE SURVEY**

### **1.1 Primary Objectives:**

- To determine usual food consumption of children aged 1 – 9 years (12 – 108 months) in South Africa
- To assess the usual nutrient intake of children aged 1 - 9 years in South Africa
- To identify factors impacting on food consumption

- To determine anthropometric status

## 1.2. Secondary Objectives:

Using the baseline data obtained from the primary objectives, propose/recommend:

- Appropriate food(s) for fortification
- Appropriate nutrition education material

## 2. SURVEY METHODOLOGY

- A cross-sectional survey of a nationally representative sample of children aged 1 – 9 years in South Africa using the Census 1996 data (see also Appendix: Protocol)
- The survey population comprised of all the children aged 1 - 9 years in South Africa. The initial survey sample was adapted by means of 50% over-sampling to allow for a defined drop-out rate, an overrepresentation of the children living in high-risk areas as well as the defined requirements for the dietary questionnaires employed in the survey. A total of 156 Enumerator Areas (EAs) were included in the survey, 82 of which were urban and 74 non-urban. A total of 3120 children were included in the survey
- Validated questionnaires [socio-demographic, 24-hour recall (24-H-RQ), quantitative food frequency (QFFQ), food procurement and household inventory [FPHIQ; in every high-risk household (HH) as well as one randomly selected HH in all other EAs] were developed specifically for the survey and were administered by trained fieldworkers. The Hunger Scale Questionnaire (HSQ) was completed by the mother/caregiver of the child

- A training manual, a video and food models were developed and employed, as appropriate, for the administration of the questionnaires
- Anthropometric status assessment included height, weight as well as mid upper arm and head circumference (the latter two are not presented in this report)
- Quality control measures were employed throughout the survey.

### **3. MAIN FINDINGS**

#### **Socio-demographic Data**

##### ***Findings***

- Of the 3120 children that were originally designed to have been included in the survey, data was obtained for a total of 2894 children, which amounts to a 93% response
- The information for the completion of the questionnaires was in the greatest majority of cases provided by the mother or a grandparent of the child and can therefore be considered reasonably reliable, within the specifications of the methodology employed. The same majority of household members were responsible for feeding the child
- In one out of ten HHs the mother was the head of the HH and this tended to be more often the case in HHs in formal and informal urban areas. One out of ten mothers of children of all age groups had no formal education. In almost one out of five HHs the head of the HH was unemployed. Unemployment was overall higher in rural, tribal and informal urban areas. One third of the HHs in the survey had a monthly income of between R 100,00 – R 500,00. This income range was

characteristic of HHs in rural, tribal and informal urban areas as well as of HHs on commercial farms

- One out of four and one out of five HHs at the national level spent respectively between R 0,00 – R 50,00 and R 50,00 - R 100,00 on food weekly
- Approximately six out of ten HHs nationally obtained their water from an own tap, whereas one out of four HHs obtained their water from a communal tap
- One out of two HHs had both a radio and a television set in working order, with the radio being the most common means of receiving information
- A very significant percentage of the country's population still lives under adverse socio-economic conditions. Although a trend towards an improvement in some of these conditions appears to be taking place, it is only the long-term socio-economic upliftment of the population that is likely to ensure the improvement of the nutritional status of the community at large.

### ***Recommendations***

- 3.1 Government should accelerate and expand its current policies and programmes on job creation. This is seen as one of the most crucial recommendations in this report, which must be afforded the greatest priority
- 3.2 The Welfare Department should consider immediate steps in increasing the income for the low income HHs in the country, especially in the rural areas and particularly on commercial farms. This could be achieved in close consultation with farmers and take the form

of income generation activities rather than “hand outs”. The latter, however, should be considered, at least in the short-term, as part of any such programme in order to achieve a measure of immediate relief. Due consideration should for instance been given to making special loans available to these groups or to developing the social capital aspects related to increased economic growth and consumption

- 3.3 Social security programmes aimed at female headed HHs should be developed, which should incorporate development
- 3.4 Families, but particularly mothers/caregivers and grandparents, should be targeted for any relief and education programmes. Particular emphasis should be placed on the education and empowerment of women
- 3.5 The radio should primarily be used, together with television, for disseminating information on expanded/new relief programmes and nutrition education as well as quality child care programmes
- 3.6 The achievement of these aims should be addressed within the current framework of the Integrated Nutrition Programme (INP) of the Directorate: Nutrition<sup>8</sup>. The Directorate should also re-evaluate its current programmes on development in terms of definition and goals in relation to its core business of nutrition and expertise.

## **4. ANTHROPOMETRIC STATUS**

### ***Findings***

- One out of ten of all children aged 1 – 9 years was underweight and just more than one in five was stunted. Furthermore, younger children (1 – 3 years of age) were most severely affected, as were those that

lived in the rural areas and on commercial farms in particular. The level of maternal education was an important determinant for these nutritional disorders

- By contrast, one out of thirteen children was overweight in the formal urban areas, a prevalence that was higher among children (one out of eight children) of well educated mothers
- At the national level the nutritional status of younger children (12 – 71 months of age) has not improved but does also not appear to have deteriorated, when compared with the South African Vitamin A Consultative Group (SAVACG) national data of 1995. In this regard, however, it should be borne in mind that the present survey placed particular emphasis on the high risk segments of the population and as such it has captured a greater percentage of households of lower socio-economic status than the SAVACG survey.

### ***Recommendations***

- 4.1 Stunting should be addressed within the current framework of the INP, which is based on an integrated nutrition strategy for South Africa. It is also strongly recommended that the Directorate: Nutrition is provided with the necessary, additional and needed resources to attain the aims and objectives of the INP
- 4.2 The findings of the present survey clearly identify the younger child (1 - 3 years of age), as a prime target group for intensified nutritional intervention, and the mother/caregiver for nutrition promotion (i.e. facilitation of healthy feeding practices including complementary feeding, quality child care and decision making) as well as education. At present, both these aims should be concurrently achieved within the

existing health facility-based and community-based nutrition programmes

- 4.3 The supplementary foods that are provided with on-going programmes should be re-evaluated/modified and should not simply concentrate on energy content but also on dietary quality and micronutrient composition. The provision of supplementary foods is seen as an interim, but crucially essential measure, in view of the extent of the prevailing poverty and food insecurity. In the longer-term, the need for continued supplementary feeding must be weighed against socio-economic development
- 4.4 The correct management of infectious diseases, especially diarrhoea and HIV/AIDS should form an integral part of any such supplementary feeding programmes
- 4.5 In terms of priorities, all children who are stunted or overweight should be targeted according to prevalence and prevailing provincial priorities
- 4.6 Due consideration should be given to accelerating the creation of crèche (child care) facilities within the community and at the work place, especially in provinces with a high prevalence of stunting as well as in disadvantaged communities within provinces, which have a high prevalence of stunting
- 4.7 Similarly, the creation of health facility-based rehabilitation centres should be accelerated for the intensive treatment, supervision and follow-up of severely malnourished children
- 4.8 Mothers/caregivers should be educated according to the prevailing needs of their environment. Both aspects of malnutrition, namely

under- and over-nutrition, as well as the importance of micronutrients in child growth should form part of any education programme. In particular, the mothers/caregivers of malnourished children, apart from being educated, should also concurrently have access to and engage in income generating programmes. Additionally, they should be trained in the rehabilitation of their children as home-based rehabilitation is considered to be more cost-effective than facility-based rehabilitation

- 4.9 The Directorate: Nutrition should engage both universities and research organisations to conduct research on the monitoring and evaluation of any such schemes that are implemented. In this regard, particular attention should be given to the long-term benefits afforded to children by such schemes
- 4.10 The Directorate: Nutrition should establish a Consultative Group, such as the National Food Consumption Survey Group, specifically mandated to monitor growth as well as the prevention, identification and treatment of malnutrition
- 4.11 An anthropometric assessment of children in the age range of the present survey should be repeated in three/five years with a view to assessing progress achieved
- 4.12 In terms of nutrition surveillance, the Directorate: Nutrition should reassess/re-evaluate the parameters currently monitored since these do not include those that reflect progress in the commonest nutritional disorder in the country, stunting. Repeated assertions that such measures are difficult to implement are largely based on personal attitudes and the limitations of proposed international policies, which may be inappropriate in relation to the specific needs of the country. Initially, this should be introduced gradually and selectively for children living in the high risk areas as identified by the present survey

4.13 The findings of the present survey should be disseminated as soon as possible to all health workers and regional staff.

## **5. NUTRIENT INTAKE (24-H-RQ AND QFFQ)**

- In general terms, one out of two children had an intake of approximately less than half of the recommended level for a number of important nutrients
- The great majority of children consumed a diet deficient in energy and of poor nutrient density to meet their micronutrient requirements
- The nutrient intake of children living in rural areas was overall considerably poorer than that of children living in urban areas
- All variables associated with household food insecurity were associated with a poorer dietary intake and a poorer anthropometric status, particularly stunting and underweight
- For South African children as a whole, the dietary intake of the following nutrients was less than 67% of the RDAs:
  - Energy
  - Calcium
  - Iron
  - Zinc
  - Selenium
  - Vitamin A
  - Vitamin D
  - Vitamin C
  - Vitamin E

- Riboflavin
  - Niacin
  - Vitamin B<sub>6</sub>
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- At the national level, the five most commonly eaten foods included maize, white sugar, tea, whole milk and brown bread. With a few exceptions, this pattern, rather than the actual frequency, appears to be fairly consistent in all Provinces
  - A significant correlation was found at the national level between energy intake and stunting
  - The consumption of animal products (milk and dairy products, eggs, meat, fish) was significantly correlated with stunting and underweight. This was the case overall for children in all age groups, in five of the nine Provinces and for children living in formal urban areas
  - Overall and within the limitations of the two methodologies employed, the findings on nutrient intake obtained by the 24-H-RQ and the QFFQ are largely in good agreement and mutually supportive of the respective findings.

## ***Recommendations***

- 5.1 The need to improve the dietary and nutrient intake of children should be addressed within the current framework of the INP, which is based on an integrated nutrition strategy for South Africa. It is also strongly recommended that the Directorate: Nutrition is provided with the necessary, additional and needed resources to attain the aims and objectives of the INP

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- 5.2 Food fortification is a trusted and tested solution to improve the micronutrient status of children and the population at large and should be implemented the soonest possible
  - 5.3 The current menus of the Primary School Nutrition Programme, the PEM scheme as well as those of crèches should be reviewed with a view to improving dietary variety and the quality of the foods used
  - 5.4 The data of the present survey should be used for the purpose of targeting families for, in the short term at least, supplementing the diet of preschool children. Specific weaning foods should be made available to high risk families with young children
  - 5.5 The introduction of a comprehensive nutrition education programme, which together with socio-economic development will impart practical knowledge and sustainable means of improving dietary intake and quality of life, is considered mandatory. It is also recommended that additional finance is made available for this purpose
  - 5.6 Nutrition education messages must be tailored to the currently prevailing consumption patterns and the desired changes therein, including the improvement of the nutrient density of children's diets as well as food hygiene and feeding practices, and, when appropriate, home grown crops, and the use of foods of animal origin from domestic animal production
  - 5.7 The creation of preschool facilities for children in poor areas is strongly recommended. State facilities for children from low-income families should provide day-care including meals, especially to children with working mothers in the rural areas and high risk peri-urban areas of the country

- 5.8 The key findings of this survey need to be widely disseminated to the public and health care workers in order to increase awareness of the level and the nature of food and micronutrient insecurity together with its effect on health and well being of individuals and the economic, educational and health care costs to the nation
- 5.9 Within the framework of health care services exclusive breastfeeding for 4-6 months should be promoted and implemented. Furthermore, the introduction of complementary feeding together with breastfeeding for up to two years should form the corner stone in the nutrition of young children. The factors responsible for the documented tendency for younger children to be breastfed for periods shorter than three months should be identified and addressed. In South Africa, these goals should be achieved in close partnership with all relevant role players and with due consideration to and respect for the choice of an informed mother regarding the feeding of her child. The prevalence of exclusive breastfeeding for 4-6 months in the country is largely unknown and should be defined. Breastfeeding practices, including exclusive breastfeeding, should form part of the national surveillance system in order to monitor progress and take corrective steps as appropriate
- 5.10 Food consumption surveys of the nature of the present survey should be repeated every three/five years and be extended to cover the whole population for the purpose of establishing baseline data and for monitoring and evaluation.

## **6. FOOD PROCUREMENT AND HUNGER**

- The findings of the survey on procurement patterns are substantially supportive of maize and sugar being the two most frequently and consistently consumed foods in the country, followed by tea, whole

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milk and brown bread. It is equally important to note that these same food items were also the ones that were found most frequently in the HH

- Most HHs procured these items by purchasing them primarily in supermarkets and to a much lesser extent in small shops
- Subsistence agriculture was not a major source of these foods in the country
- HH income would appear to be a decisive factor in the consumption and procurement of foods
- At the national level, one out of two HHs experienced hunger, one out of four were at risk of hunger and only one out of four HHs appeared food secure
- In the rural areas a significantly higher percentage of HHs experienced hunger when compared with HHs in the urban areas
- There was an overall consistent association between the hunger risk classification and anthropometric status. A similar association was found with energy intake and the intake of micronutrients
- HHs at risk of hunger or experiencing hunger procured a smaller number of food items and had a similarly smaller number of food items in the HH inventory. Additionally, HHs at risk of hunger or experiencing hunger tended to be of the informal dwelling type, had the lowest monthly income and spent the lowest amount of money weekly on food. The mothers of such HHs also had a lower standard of education

- Food insecurity was, on average, experienced nationally by two out of three HHs, five out of ten individuals and four out of ten children respectively at the HH, individual and at the child hunger level
- It would appear that women sacrifice the quality of their diets and limit the amount of food eaten by the adults in a HH in order to preserve the amount of food available to their children
- The findings of the FPHIQ and the HSQ are largely supportive of the poor nutrient intake as obtained by the 24-H-RQ and the QFFQ.

### ***Recommendations***

- 6.1 Food and micronutrient insecurity should be addressed within the current framework of the INP<sup>8</sup>, which is based on an integrated nutrition strategy for South Africa. It is also strongly recommended that the Directorate: Nutrition is provided with the necessary, additional and needed resources to attain the aims and objectives of the INP
- 6.2 The creation of employment opportunities should rank among the highest priorities of the government
- 6.3 The data of the present survey should be analysed more extensively with a view to identifying parameters which can be used to target HHs at the highest level of food insecurity
- 6.4 The data of the present survey should also be communicated to other relevant sectors within government, especially the agricultural sector, in order to highlight the importance and extent of the food and micronutrient insecurity in the country.

## **7. FOOD FORTIFICATION**

- Against the outlined background of the findings of the present survey, the following recommendations are made:

### **Recommendations**

- 7.1 Maize (sifted, special, super), white and brown wheat flour and white retail sugar should be the vehicles for fortification on a mandatory basis, henceforth collectively referred to as food vehicles
- 7.2 The micronutrients that should be used for fortification should be:
  - Vitamin A
  - Thiamin
  - Riboflavin
  - Niacin
  - Folic acid
  - Vitamin B<sub>6</sub>
  - Iron
  - Zinc, and
  - Calcium
- 7.3 The food vehicles should be fortified at the level designed to deliver 33% of the current RDAs per serving at the point of consumption, taking into account the inherent content of these micronutrients in the food vehicles, the anticipated losses of these micronutrients during production, distribution and food preparation as well as the limitations that may arise from organoleptic considerations of such additions, especially with regard to riboflavin, folic acid, iron, zinc and calcium
- 7.4 Sugar should be fortified with vitamin A only at the level of 50 IU/g, and the portion size for calculation purposes for maize and wheat flours should be 200g

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- 7.5 Encompassing legislation, which must include all aspects of the necessary monitoring and evaluation of a fortification programme, should be enacted and implemented
  - 7.6 The on-going discussions with the relevant sectors of the food industry should be continued and expanded with a view to reaching mutually acceptable solutions on issues relating to costs, product quality and acceptability as well as any other related issues likely to impact on the proposed fortification programme
  - 7.7 The current food fortification task group within the Directorate of Nutrition should be transformed into a permanent committee on food fortification with a clear mandate to monitor and coordinate all aspects of the proposed food fortification programme
  - 7.8 Current voluntary practices regarding the addition of fat soluble vitamins to margarines should be retained
  - 7.9 The current component of the INP regarding vitamin A supplementation should be retained and should be targeted to children at the highest risk for vitamin A deficiency
  - 7.10 The current component of the INP regarding multi-micronutrient supplementation (other than vitamin A) should be retained and should be targeted to children at the highest risk for such deficiencies. All such supplements should be reassessed in terms of composition and posology
  - 7.11 Foods, especially those consumed by children older than 6 months of age, which are currently fortified on a voluntary basis, should be

reassessed with a view to harmonising the proposed framework of fortification. The necessary negotiations with the relevant manufacturers should be concluded prior to the enacting of legislation on fortification. Additionally, any fortified products currently used in the PSNP and PEM schemes should be re-evaluated

- 7.12 Any future proposals by food manufacturers regarding the fortification of additional food vehicles on a national basis with vitamin A and/or iron should first be discussed with and agreed upon by the Directorates of Nutrition and Food Control with a view to assessing their impact and safety within the framework of the proposed fortification programme
- 7.13 With regard to cow's milk and in view of the findings of the present survey, negotiations should be initiated with the relevant sectors of the dairy industry in order to investigate the feasibility of fortifying milk with selected fat soluble micronutrients
- 7.14 The inclusion of milk in the menus of the Primary School Nutrition Programme and in crèches should be seriously considered and implemented
- 7.15 No health claims other than those approved by the Directorate of Food Control should be allowed for any of the food fortification vehicles
- 7.16 With regard to Trade considerations, negotiations should be initiated with neighboring countries with a view to achieving regional standards for fortified food items for import/export purposes
- 7.17 The impact of the proposed fortification programme on the country's population should be evaluated during the programme's third/fifth year

of implementation. Such an evaluation should form an integral part of the regular evaluation of the “monitoring and evaluation” component of the programme.

## **8. NUTRITION EDUCATION**

Against the outlined background of the findings of the present survey and in terms of nutrition education, the following recommendations are made:

### ***Recommendations***

- 8.1 An in-depth analysis of the economic implications and needs for a national nutrition education programme should be conducted prior to finally selecting the most cost-effective and appropriate nutrition education strategy on fortification and/or supplementation
- 8.2 A national consultative group on nutrition education should be constituted in order to ensure that nutrition messages and nutrition education/promotion campaigns are consistent and globally supportive, that duplication is prevented and that the targeting of such messages/campaigns is prioritised in relation to the findings of the present survey. This consultative group by necessity must include government (all sectors) as well as industry and NGO’s involved in providing nutrition and nutrition related information to the public. Alternatively, a smaller consultative group could coordinate activities in the different sectors
- 8.3 All relevant role players (families, communities, health, social, agricultural, educational workers, policy makers and politicians) should be informed that the critical dietary inadequacies, in terms of dietary variety and nutrient intake in general and micronutrients in particular, affects the majority of the children population in the country and

impacts severely and adversely on their growth and overall development

- 8.4 A government-food industry partnership must be established and should work in unison in enhancing the already favourable perception of the public at large regarding the benefits of consuming fortified foods. The primary guide of such a crucial partnership must be for the benefit of the people rather than for market share
- 8.5 Families and communities, especially mothers/caregivers must be informed that micronutrient deficiencies can be prevented by consuming fortified foods as well as by consuming, within their financial means, a variety of foods especially legumes, fruits, vegetables and, when possible, foods of animal origin. In this regard, the concept of “budgeting for good nutrition” should be introduced and disseminated as should “nutrition wise”, “good value for money” food choices
- 8.6 In conjunction with recommendation 9.6.5, Health- and Community-Based Facility Programmes should become more specifically involved in educating mothers/caregivers on the importance of micronutrients and correct nutrition in the growth of their children. Health Facility Based Programmes should also educate mothers/caregivers on the importance of compliance when micronutrient supplements are dispensed
- 8.7 Families, mothers/caregivers should be educated on the importance of regular clinic visits to ensure that their children grow adequately because of the subtle nature of stunting. The concept that many children who look apparently healthy may not be growing to their full potential needs to be highlighted and emphasised

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- 8.8 Health workers involved in feeding schemes should be educated on the choice of micronutrient rich foods and should also be made the conduit for strengthening the messages on the importance of micronutrients. This should also be the case for all personnel working in day care facilities especially in relation to purchasing and preparation of food for young children
- 8.9 The importance of exclusive breastfeeding for the first 4 – 6 months of life in ensuring an adequate micronutrient intake early in life, as well as the important contribution breast milk can make up to two years of life in meeting micronutrient requirements, should be included and be more emphasised as part of the programme on promotion and protection of exclusive breastfeeding. However, one should guard carefully against creating a feeling of false security in the mother in relation to breast milk being adequate to meet the nutrient requirements of the older child, which is clearly NOT the case
- 8.10 Families, mothers/caregivers, health workers should be educated on the importance of and need for younger children to have small and frequent meals for adequate growth. Monitoring and evaluation should specifically focus on the facilitating factors and barriers to improving young child feeding with energy- and nutrient-dense foods
- 8.11 The important slogan of “clean hands, clean food and a clean home protect children against diseases and ensures optimal child growth” should be promoted and disseminated to all individuals concerned with the care of young children
- 8.12 In dealing with malnourished children (under- and over-weight), their mothers/caregivers should be provided with nutrition information

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relevant to the prevailing needs of their environment and in relation to home based rehabilitation

- 8.13 The concept of “child health begins before birth” in relation to planned parenthood (age, child spacing, nutritional and prenatal care), the importance of micronutrient supplementation during pregnancy (iron, folate) and preparation for choice of infant feeding (breastfeeding promotion) should be promoted to all women of child bearing age
- 8.14 In rural or other appropriate settings, the important role home based crops and livestock can make to the children’s diet should be strengthened and promoted as feasible and appropriate
- 8.15 The recommended Nutrition Education activities should, when applicable to children older than five years of age, follow the FBDG as follows:
- Enjoy a variety of foods
  - Be active!
  - Make starchy foods the basis of most meals
  - Eat plenty of fruits and vegetables every day
  - Eat legumes regularly
  - Foods from animals can be eaten every day
  - Use fat sparingly
  - Use salt sparingly
  - Drink lots of clean, safe water
  - If you drink alcohol, drink sensibly
- 8.16 Dietary guidelines for children younger than five years of age should be developed

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- 8.17 The proposed Nutrition Education Programme should be specific and sensitive to provincial differences with regard to available household appliances, prevailing circumstances and cultural requirements. Equally, nutrition education materials on the chosen topics should be relevant to prevailing environmental circumstances. Such a programme should capitalise on existing good practices
- 8.18 The primary target groups for the proposed Nutrition Education Programme should not only be all the mothers/caregivers of children and the children themselves (depending on age) but also their grandparents, and specifically the poor (limited financial and other resources) with relative low formal educational levels in rural areas especially on commercial farms. Furthermore, the same nutrition programme/messages need to be extended to the urban areas in view of the high rates of urbanisation, and also to pregnant women
- 8.19 The secondary target groups should include day care workers, the food production and marketing sector, teachers and schools (pre-primary, primary and secondary), as well as all health workers including all private health practitioners. The low schooling level of mothers also part of the regression analysis suggests additional secondary targets for information i.e. schoolchildren
- 8.20 The tertiary target groups should include decision-makers, administrators and politicians at the national, provincial and community level. This group needs to be involved in a number of alternative strategies such as advocacy, regulation (food labelling, food fortification, supplementation), organisational change (health promoting schools and healthy cities), legislation (input on minimum wages of farms workers from the nutrition sector)

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- 8.21 The multiple causality of nutritional disorders demands that any Nutrition Education Programme (like all other nutrition relevant activities) must be of a multi-sectoral nature. The primary target groups should be reached where they “work, live and play” as well as through the education and health system, and agriculture
- 8.22 The radio and/or television should be the primary communication medium for the Nutrition Education Programme but not at the exclusion of other means and modes of communication such as printed material, the broader media, and, importantly, face-to-face activities at every possible opportunity
- 8.23 The content of the education material must be sensitive to the prevailing low level of education of the primary target groups and cater for language and cultural prerequisites
- 8.24 In relation to 9.6.23, any education material must be developed within the current framework and all components of the Integrated Nutrition Programme of the Directorate: Nutrition of the Department of Health
- 8.25 The overall monitoring and evaluation of the proposed Nutrition Education Programme should form an integral component of the programme. This should be achieved by establishing the level of knowledge of the public at large on basic nutrition issues in any future national surveys, and finally
- 8.26 The findings of the present survey should be made available to all health workers, the media and the public at large in order to increase awareness of the scale and nature of the most prevalent nutritional disorders in the country.

## **9. RECOMMENDATIONS OF A GENERAL NATURE**

- 9.1 Since very significant delays were encountered and a considerable time was spent on designing and drawing a national probability sample of children, every effort should be made in future health surveys to share sampling resources with other organisations conducting national health surveys. An example of such an organisation is the Central Statistical Service, which conducts annually the October household survey. Given that the current emphasis of the Directorate of Nutrition is correctly placed on the improvement of child health, it is recommended that the Directorate should investigate the feasibility of establishing and maintaining a national valid sampling frame for children
- 9.2 Socio-economic upliftment is considered essential to sustainable reduction of micronutrient deficiencies and undernutrition in general. A detailed discussion of this subject falls outside the scope of this report. Nevertheless, it is important to note that these particular deficiencies, because of their intimate link to socio-economic status, may be used as medium-term indicators in assessing the success of the currently implemented national nutrition programmes. Such findings should be incorporated into the national Health Information System
- 9.3 The findings of the present survey indicate that the four most seriously affected provinces were the Eastern Cape, the Northern Cape, the Northern Province and Mpumalanga. The Directorate of Nutrition should establish whether further assistance, other than fund allocations, would be required in terms of expertise to ensure the capability to implement the recommendations in this report in these Provinces

9.4 In order to achieve a sustainable solution in the reduction of micronutrient deficiencies and other dietary inadequacies, it is essential to develop a comprehensive strategy that will address such issues in the immediate- and medium-term, i.e. until such time that socio-economic upliftment can achieve sustained reduction. For an immediate- and medium-term solution to be effective, several different aspects of adequate micronutrient intake need to be addressed at a national level, which should include campaigns to:

- Increase consumer awareness of adequate micronutrient intake
- Increase awareness of the importance of breastfeeding
- Improve health worker training in respect of stunting, micronutrients, and breastfeeding.

Finally, the findings of the present survey are largely confirmatory of those of the recently published report on poverty in country in terms of the socio-economic determinant of malnutrition including income. Importantly and in relation to HIV/AIDS, nutritional status is considered of the utmost importance in delaying the progression of the disease, reducing the incidence of complications related to the disease, reducing overall health care costs and improving quality of life. On these and other considerations, therefore, it can be argued strongly that the nutritional rehabilitation of those at risk must be given the highest priority.

**In conclusion**, we believe that this has been a very successful and much needed survey in both providing base line data for future reference and also in formulating policy on a number of aspects of food fortification in the country. The Directors of the survey wish to express their sincere gratitude to all those who made the study possible and successful. They are all acknowledged in the appropriate chapter.