DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

GUYANA

SECTOR FACILITY

BASIC NUTRITION PROGRAM

(GY-0068)

LOAN PROPOSAL

This document was prepared by the project team consisting of: Ashu Handa (RE3/SO3) Project Team Leader; Amanda Glassman (RE3/SO3); Ethel Muhlstein (RE3/SO3); Juan C. Perez Segnini (LEG); and Luis C. Antola (COF/CGY).

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SOCIOECONOMIC DATA

For basic socioeconomic data, including public debt information, please refer to the following address:
http://www.iadb.org/RES/index.cfm?fuseaction=externallinks.countrydata

ABBREVIATIONS

CIDA	Canadian International Development Association
CFNI	Caribbean Food and Nutrition Institute
CRP	Community resource persons
FSO	Fund for Special Operations
GDP	Gross Domestic Product
GNP	Gross National Product
HIES	Household Income and Expenditure Survey
HIPC	Heavily Indebted Poor Countries
IDB	Inter-American Development Bank
IEC	Information, education, and communication
IMCI	Integrated Management of Childhood Illness
JSA	Joint Staff Assessment
KAP	Knowledge, attitudes, and practice
MCH	Maternal and Child Health
MICS	Multiple Indicator Cluster Survey
MIS	Management information system
MOH	Ministry of Health
MRS	Micronutrient Survey
NPAN	National Plan of Action on Nutrition
PAHO	Pan-American Health Organization
PEU	Program Execution Unit
PRGF	Poverty Reduction and Growth Facility
PRS	Poverty Reduction Strategy
PRSP	Poverty Reduction Strategy Paper
SIMAP	Social Impact Amelioration Program
UNICEF	United Nations International Children's Education and Relief Fund
WHO	World Health Organization

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EXECUTIVE SUMMARY

Borrower:	Cooperative Republic of Guyana		
Guarantor:	Cooperative Republic of Guyana		
Executing agency:	Ministry of Health		
Amount and source:	IDB (FSO):	US$	5.000 million
	Local:	US$	1.412 million
	Total:	US$	6.412 million
Financial terms and conditions:	Amortization Period:		40 years
	Grace Period:		10 years
	Disbursement Period:		4 years
	Interest Rate:		1% first 10 years; 2% thereafter
	Supervision and Inspection:		1%
	Credit Fee:		0.5% on undisbursed amounts
	Currency:		United States Dollars

Objectives: The objective of the program is to reduce malnutrition among women and young children in poor communities in Guyana.

Description: The program will focus on three areas of intervention: (i) child feeding practices (US$3.5 million), which includes nutrition training, dissemination, and a food coupon scheme, (ii) anemia reduction (US$1.0 million), which includes purchase and distribution of micronutrients to young children and pregnant women; and (iii) institutional strengthening and impact evaluation (US$0.75 million), which includes the development and implementation of a management information system, an evaluation of the proposed interventions, and technical assistance and training.

Bank's country and sector strategy: The Bank's country strategy, which benefited from the broad stakeholder consultation on the Poverty Reduction Strategy Paper (PRSP), includes as key objectives strengthening the implementation capacity of the public sector and the reduction of poverty. In the area of health, the PRSP indicates that "To improve the nutritional status, not only of women and children but of the entire population with emphasis on the poor, priority attention will be given to … expanding services to pregnant and lactating women below the poverty line. The core elements of the nutrition program are being designed." (p.40) The proposed program is identified in the Bank's strategy and is consistent with Guyana's PRSP, since the reduction of malnutrition-related

morbidity and mortality will in turn contribute to the reduction of poverty. The program will also strengthen the government's capacity to respond to malnutrition problems among poor women and young children.

Coordination with other Official Development Finance Institutions: The proposed program will be administered under the supervision of the Health Reform Unit, which chairs the Donors Thematic Group under the Poverty Reduction Strategy. In addition, the program has already established an inter-ministerial committee conformed by various ministries and independent agencies. Furthermore, the program is based on the National Nutrition Plan, which has been discussed with all relevant agencies – the Pan American Health Organization (PAHO), the United Nations International Children's Education and Relief Fund (UNICEF), and the Caribbean Food and Nutrition Institute (CFNI).

Environmental/ social review: This program will have a significant social impact, since it will improve the nutritional status of high-risk groups.

Since the proposed program does not finance construction or health interventions that involve hazardous wastes, it is not expected to have a negative impact on the environment.

Benefits: The program is expected to reduce the incidence of maternal hemorrhage, low birth weight, and morbidity and mortality among children, as well as improve the effectiveness of other health interventions.

Risks: Main risks related to this program are the following:

(i) shortage of qualified personnel caused by low salaries that induce a high staff turnover and a constant need to retrain workers. This risk will be mitigated by establishing on-going training systems and by strengthening nutrition training to primary health care workers; and

(ii) leakage of the food coupon through acceptance of coupons for purchase of ineligible items. This risk will be mitigated by training shopkeepers and performing random monitoring of compliance with program rules.

Special contractual clauses:

Special conditions prior to first disbursement: (i) present Operating Manual as agreed with the Bank; (ii) initiate procedures to contract firm for the design and delivery of nutrition education; and (iii) hire the Program Executing Unit Director. Notwithstanding non-compliance, the Bank may disburse up to US$300,000 to allow for the start-up of program activities (see para. 3.26-3.28).

Poverty-targeting and social equity classification:

This operation qualifies as a social equity enhancing project, as described in the indicative targets mandated by the Bank's Eighth Replenishment (document AB-1704). Furthermore, this operation qualifies as a poverty-targeted investment (PTI) (see para. 3.8).

Exceptions to Bank policy:

See procurement section.

Procurement:

Approval for direct contracting is recommended for the procurement of sprinkles, for the design and secure printing of food coupons, and for the hiring of a local firm to perform the impact evaluation. Procurement of all other goods and services will follow Bank's standard procurement procedures (see para. 3.21-3.24). International Competitive Bidding (ICB) will be used to procure services in excess of US$250,000 or goods in excess of US$350,000. No construction will be financed through this operation.

Performance indicators and monitoring benchmarks:

I. Component 1: Child feeding

- Develop and implement national information, education, and communication (IEC) strategy to promote exclusive breastfeeding in infants under 6 months, by June 2004.
- Provide monthly food vouchers to careers of children aged 6-24 months in poor districts through health centers, contingent upon regular attendance and participation in relevant health center activities. 5,000 coupons distributed by January 2004; 9,000 coupons by January 2005; 10,000 coupons per year thereafter.
- Develop and implement national IEC strategy to improve young child feeding practices, by August 2004.
- Provide in-service training to health center staff on breastfeeding promotion and young child feeding. Staff in 5 health centers trained by January 2004; staff in 15 health centers trained annually for duration of operation.

II. Component 2: Anemia reduction

- Develop and implement national IEC strategy to improve compliance with iron fortification regimes, by August 2004.
- Provide sprinkles children aged 6-24 months in poor districts through health centers. 5,000 beneficiaries by January 2004; 9,000 beneficiaries by January 2005; 10,000 beneficiaries per year thereafter.
- Provide sprinkles to pregnant and lactating women in poor districts through health centers. 2,000 beneficiaries by January 2004; 5,000 beneficiaries per year thereafter.

III. Component 3: Institutional strengthening and impact evaluation

- Implement evaluation to assess project impact on child nutritional status; compliance with iron regime among women; food consumption behavior of beneficiary households; knowledge, attitudes and practice (KAP) of adult beneficiaries; and targeting of beneficiaries. Baseline survey completed and analyzed by January 2004; first round of data collected and analyzed by January 2005; second round of data collected and analyzed by January 2006.
- Nutrition module of health information systems revised and implemented, by January 2005.

Reporting arrangements:

The Project Executing Unit (PEU) will submit quarterly reports summarizing the progress made on the performance indicators and outcomes agreed upon in the log frame. In addition, the PEU will prepare a consolidated annual progress report on the execution of the program, which will be discussed at the annual meeting of the Bank and the executing agency to monitor and review the execution of the program, and to discuss the results of the impact evaluation activities. The executing agency will invite the Bank to participate in presentations and discussions related to the results of the baseline survey, and each of the two subsequent surveys to measure program impact. These discussions are scheduled to take place at the end of the first, second, and third year of the program. The second such discussion will coincide with the mid-term

review of the operation. The final results of the impact evaluation, scheduled to be completed by the end of the third year of program implementation, will be used by the Bank and the Government to define the future direction of this program when it is taken over by the authorities at the end of the fourth year.

I. FRAME OF REFERENCE

A. Macroeconomic framework

1.1 Guyana is a small, open, low-income economy whose development has been recently held back by external shocks and political problems. Beginning in 1988, important reforms were implemented to stabilize and liberalize the economy and to give the private sector a wider role. The improved policy framework had highly positive effects from the early 1990s onwards: during 1991-97, annual real Gross Domestic Product (GDP) growth averaged 7%, compared to minus 3% in the 1980s, while inflation was reduced from over 100% in the late 1980s to 4.5% in 1997. Due to the resurgence in economic activity and only marginal population growth, Guyana's per capita Gross National Product (GNP) increased to US$770 in 2000, slightly surpassing its previous peak in 1980.

1.2 During the 1998-2001 period, however, progress was impeded by external and internal shocks including the El Niño drought followed by flooding; deteriorating export prices for bauxite, gold, timber, and rice and loss of preferential markets; a 66% government sector salary increase triggered by a major public service strike; rising petroleum prices; recurring political unrest, and an escalation in criminal activity. As a result, real GDP growth stagnated, averaging only 0.4% between 1998-2001. In this regard, PRSP related spending with HIPC (heavily indebted poor countries) resources have had a positive effect since 1999 on growth and also in ameliorating the impact of external and internal shocks, supporting social spending, and attenuating the increase in poverty. Excluding this spending, real GDP would have actually contracted over this same period. Despite the government's substantial policy efforts, declining economic growth and export performance further deteriorated Guyana's macroeconomic indicators in 2001: the public sector deficit increased to 7% of GDP, the external current account deficit increased to 18.8% of GDP, and private investment decreased to a decade low of 8% of GDP, while the rate of inflation decreased to 1.5%.

1.3 A new Poverty Reduction and Growth Facility (PRGF) and Joint Staff Assessment (JSA) of the PRSP were approved by the Executive Board of the IMF on September 13, 2002. In agreeing to the program, the Government of Guyana recognized that tax reform and other key structural reforms are important for debt sustainability and poverty reduction. The World Bank approved the JSA and a new country assistance strategy on September 19, 2002. Following this, the Government asked the Bank to begin providing interim debt relief to Guyana under the enhanced HIPC initiative.

B. Poverty in Guyana

1.4 Despite the resurgence in economic activity over the past decade, Guyana's GDP per capita of US$785 is still one of the lowest in the region and much of the country's social infrastructure remains in a state of deterioration. Consistent with Guyana's successful economic performance in the 1990s, absolute poverty at the

national level declined from 43% in 1993 to 35% in 1999. While this decline is significant, the overall rate is still high by regional standards. Moreover, the benefits of growth have been uneven, with deep pockets of poverty persisting or even increasing in rural areas and among certain groups.

1.5 The largest decline in poverty occurred in Georgetown, from 29% to 16%, with smaller decreases in other urban areas (from 23% to 15%) and the rural coastal region (from 45% to 37%). However, the rural interior of Guyana, already the poorest area in 1993, became even worse off by 1999, with absolute poverty rising from 79% to 92%. The poverty gap, a measure of how far on average the poor are below the poverty line, followed the same trend as the headcount. The national poverty gap declined by 3 percentage points from 16% to 13% during the 1993-99 period, with declines in all main regions except for the rural interior, where the poverty gap increased significantly from 46% to 67%.

C. Nutritional status and etiology

1.6 Worldwide, malnutrition, even in its milder forms, can increase the likelihood of morbidity and mortality from a number of different diseases and is associated with up to 56% of all childhood mortality. In addition, malnutrition can have an important negative impact on early growth and cognitive development among children, and lower immunity levels and work capacity among adults, among other effects. The adverse effects of malnutrition are most severe for children and pregnant women.

1. Data on nutritional status

1.7 There are many deficiencies in the Maternal and Child Health (MCH) information system, which make it difficult to assess the level and trends in child growth and nutritional status from clinic based data in Guyana. First, not all clinics have the necessary equipment to measure and report child weight. Second, only child weight (not height) is collected. Third, the little data that is collected comes from urban and coastal clinics, and is summarized at the clinic level before being passed to the center, making cross-tabulations and other basic data analysis virtually impossible. Finally, coverage is concentrated among children under 12 months of age as clinic attendance rates decline significantly after that time. For these reasons, the MCH information system is severely limited as a tool for nutrition surveillance, and for planning and monitoring purposes.

1.8 Fortunately, during the 1990s three nutritional surveys were carried out on nationally representative samples of children under 5 years of age in Guyana.[1]

[1] The three surveys were: (1) the National Household Income and Expenditure Survey of 1993 (HIES), which included a nutrition module that covered 581 children under 5 in 8 of the 10 regions in the country; (2) the 1997 Micronutrient Survey (MRS) which obtained information on nutritional status, vitamin A, iron and iodine in 448 households with children under 5 in the 10 regions of the country; and (3) the Multiple Indicator Cluster Survey of 2000-01 (MICS) which covered 4,538 households and 2,672 children under 5.

Taken together, the results from these surveys permit an adequate analysis of the nutritional status and associated risk factors of children in the country.

2. Nutritional status

1.9 **Anthropometry**. Table 1 summarizes the results of the three surveys referred to above. While overall (weight-for-age) and chronic (height-for-age or stunting) malnutrition is moderate among children under 5 when compared to countries at similar levels of GDP, reports of acute malnutrition (weight-for-height or wasting) are extremely high and similar to those reported in countries that suffer famine and food shortages. Overall malnutrition declined between 1993 and 2000, but there has been no discernable improvement in nutritional status of children between the last two surveys. Furthermore, the levels of overall, chronic and acute malnutrition are similar. The prevalence of malnutrition in Guyana presents a clearly atypical distribution, divergent from that observed in other Caribbean nations, in other Latin American nations and in Africa, where overall and chronic malnutrition rates are generally five times greater than acute malnutrition. There are several possible explanations for this anomalous pattern;[2] nevertheless, the different survey results are consistent, so that it is difficult to dismiss the findings related to acute malnutrition.

Table 1.1

Prevalence of malnutrition in children under 5 years of age in Guyana

Survey	Overall Malnutrition (Weight-for-age)	Chronic Malnutrition (Height-for-age)	Acute Malnutrition (Weight-for-height)
HIES, 1993	18.3	12.4	7.7
MRS, 1997	11.8	10.1	11.5
MICS, 2000	13.6	10.8	10.6

Rates shown are percentage below 2 standard deviations of the age and sex specific reference median.

1.10 Certain socioeconomic characteristics are closely related to malnutrition. Ethnicity appears to be a decisive factor; overall malnutrition is greatest among the Indo-Guyanese and least among the Amerindian populations, attributable to the duration of exclusive breastfeeding and infant feeding practices. Age is also related to overall malnutrition with children from six to 23 months suffering the highest levels, perhaps due to the combined effects of early cessation of exclusive

[2] First, genetic or environmental factors may generate an excessively high prevalence of emaciation or acute malnutrition. Second, the results of the surveys may be a product of errors of measurement owing either to the technique employed or to the quality of the instruments. A third factor that may contribute to inaccurate results are errors in digitization, analysis or interpretation of data. These hypotheses are discussed in Atalah (2000).

breastfeeding, inadequate complementary feeding and infectious disease.[3] Being a member of a large family or living in a female-headed household are also risk factors. Chronic malnutrition is predominant in the interior of the country, where Amerindian communities are concentrated, while acute malnutrition is concentrated in the rural coastal area and is attributed to poverty rather than inadequate food availability.

1.11 **Anemia**. In both pregnant women and children under five in Guyana, iron deficiency anemia stands at 50%, a moderate to severe population-level deficiency by international standards, and has remained nearly unchanged since 1971. Almost half of anemia cases are categorized as severe. Anemia is one of the primary causes of maternal death and is also a major cause of childhood mortality. Other consequences of iron deficiency are impaired physical growth; potentially permanent effects on neurological functions involving cognition, emotional behavior, reaction to and reception of stimuli, attention span, learning capacity, and neuro-motor development and function; decreased capacity for physical work; lowered immunity, resulting in increased susceptibility to infections; and alterations in the reproductive process (Institute of Medicine 1997).

1.12 **Low birth weight**. Low birth weight is another indicator of maternal and child nutrition status. According to available data, 11% of newborns weigh under 2,500 grams, a relatively high figure, suggesting the possibility of high rates of maternal malnutrition or low weight gain during pregnancy. The 1997 Micronutrient Survey (MRS) showed that 20% of women between the ages of 20 and 30 have a body mass index below 18.5, and hence are at three to four times the risk of bearing a child weighing less than 2,500 grams or underweight (2,500 to 2,999 grams) at birth. In addition, 12% of births in Guyana take place among women younger than 20 years old and birth spacing is short, both factors that are highly related to low birth weight.

1.13 **Obesity**. Obesity is a growing malnutrition problem in Guyana. Nearly 40% of adults are overweight, with the prevalence of obesity increasing with age. Significantly more women are obese compared to men. Obesity is associated with an increased risk of premature death and is a major risk factor for chronic diseases that impact on the quality of life in adulthood.

3. Behavior

1.14 **Feeding practices**. Appropriate infant feeding practices are of fundamental importance for the survival, growth, development, health and nutrition of infants and children. The World Health Organization (WHO 2002) recommends exclusive breastfeeding for six months followed by complementary feeding through the introduction of nutritionally adequate, safe and appropriate

[3] For example, Ministry of Health statistics indicate that diarrhea remains the leading cause of death in the 1-4 year age group, and was the second highest cause of death in infancy in 2000. In addition, more than 53% of the Guyanese population is exposed to malaria each year (PAHO 2000) and associated morbidity and mortality is high.

complementary foods in conjunction with continued breastfeeding until two years of age.

1.15 In Guyana, breastfeeding predominates until the second year of life, but is exclusive in only a small proportion of children in the first six months, which is when it yields the greatest benefits. Nearly 40% of breastfed children began to receive other food before they were four months old. According to the most recent survey data, only 15% of children under three months were exclusively breastfed, though most infants continue to be breastfed in combination with complementary feeding until almost two years of age.

1.16 The higher incidence of malnutrition seen at six to 24 months is therefore likely due to poor choice of non-breast foods. For example, 60% of infants in a Ministry of Health clinic survey of feeding practices received plain or sweetened water and infant formula from as early as the first month of life. While the majority of women who participated in the survey were aware of the health and economic benefits of exclusive breastfeeding in theory, misconceptions and negative attitudes regarding the adequacy of breast milk and various aspects of the breastfeeding process and its management were common, leading to the introduction of nutrient-poor foods, such as water, fresh juice and unfortified cornmeal, barley or plantain porridges. In addition, feeding during common childhood illnesses, such as diarrhea and malaria, is often inadequate.

1.17 **Iron supplementation**. Oral iron supplementation is provided for pregnant women attending clinics in government-run health centers. However, a recent assessment of this program showed that while the availability of supplements was generally good, poor compliance with their consumption was a major constraint; only 20% of pregnant women reported taking supplementation in 2000.

1.18 **Diet diversity among Amerindian groups**. Chronic malnutrition is concentrated among Amerindians in the rural interior of the country, and is linked to deficiencies in key micronutrients such as calcium and zinc. The few studies available indicate that the cause of these deficiencies is lack of diet diversity rather than general food insecurity.

D. Government strategy

1.19 In response to the malnutrition challenges facing the country, the government developed a National Plan of Action on Nutrition (NPAN) in 1998. The NPAN sets out priority areas for intervention to improve the nutritional status of the Guyanese population, including nutritional supplementation, fortification, complementary feeding, education and management of sick children. However, progress in the implementation of the plan has been mixed. In addition, the government's recently completed Poverty Reduction Strategy (PRS) highlights strengthening of the maternal and child health care delivery system and reduction of malnutrition among pre-school children as key areas of investment for poverty alleviation.

1.20 **Complementary feeding**. Both stages of the Social Impact Amelioration Program (SIMAP I and II[4], loan numbers 912/SF-GY & 985/SF-GY respectively) financed the distribution of milk and rice in beneficiary communities. As a result of an evaluation of this strategy under SIMAP I (Immink 1997), which recommended gradually phasing out the distribution of food and increasing efforts in nutrition education, community resource persons (CRP) were hired under SIMAP II to provide nutrition education in communities receiving food. However, a second evaluation carried out in 2000 under SIMAP II (Omawale 2000) indicated that the CRP lacked basic skills and training necessary to provide the service for which they were hired and had not been able to communicate key health messages regarding breastfeeding and complementary feeding. Further, the 2000 evaluation found that while food distribution at the health clinic was an effective mechanism for increasing demand for health care services, the transfers had little impact on child or maternal nutritional status due to the type of foods distributed and the lack of follow up education and counseling. As a result, the milk and rice distribution subprogram was eliminated under SIMAP III (loan 1085/SF-GY).

1.21 **Micronutrient supplementation and fortification**. As mentioned earlier, oral iron supplementation is provided for pregnant women at government-run health centers. Although availability of drugs is good, there are serious issues with respect to take-up. Moreover, sustained public education on the benefits of supplementation and the promotion of dietary improvement in all groups to enhance iron intake and absorption has never been achieved. In addition, locally milled flour is fortified with adequate levels of ferrous sulphate, which is regarded as having good bio-availability and seems to be consumed regularly in various forms. However, there is some evidence that the use of flour products with dietary inhibitors of iron absorption may be decreasing the effectiveness of this intervention.[5]

1.22 **Maternal and child health services**. The Ministry of Health has recently adopted the Integrated Management of Childhood Illness (IMCI) strategy, which can have an important impact on tracking of nutritional status, breastfeeding, and prevention and management of common childhood illnesses. Activities under the strategy include improving the case management skills of health professionals, improving the quality of the health system required for effective management of childhood illness, including appropriate feeding during illness, and improving family and community health practices. Two rounds of provider training have been held to date and additional resources are required to extend the scheme.

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[4] SIMAP stands for Social Impact Amelioration Program, a social investment fund that operates primarily in rural communities in Guyana. SIMAP is a statutory agency that falls under the Ministry of Human Services.

[5] A food consumption survey based on 24 hour recall is currently being fielded by the Food Policy Unit of the Ministry of Health, with support from the Caribbean Food and Nutrition Institute (CFNI), which will permit further analysis of this hypothesis.

1.23 Much progress has been achieved in the implementation of the Baby Friendly Hospital Initiative, which has contributed to higher levels of breastfeeding initiation rates. Current nutrition education interventions for improving child feeding practices, however, are largely confined to hospitals and child health clinics and tend to center on the provision of information, without counseling or behavioral interventions. Finally, there is little follow up of mothers to assure continued breastfeeding and adequate complementary feeding behaviors.

E. Experience of the Bank and other development agencies

1.24 In Guyana the Bank is currently executing a technical cooperation (ATN/SF-5834-GY) to assist the government in the definition of policies to address institutional, financial, managerial and service delivery issues in the health sector. The implementation of these policies, envisioned to be carried out under a dedicated health loan in 2003, can have an important impact on the future success of the IMCI initiative, as well as efforts to improve nutritional status.

1.25 To date the Bank has financed several nutrition interventions in the region, including food distribution, though always as part of a broader poverty alleviation operation. Examples include the program to Assist Children and Adolescents at Risk (1008/SF-AR & 1111/OC/AR), Social Protection Program (1174/OC-BR), the Comprehensive Services for Children under Six Program (995/SF-BO), and SIMAP I and II. However, the proposed program would be the Bank's first stand-alone operation for the reduction of malnutrition.

1.26 The international partner agencies in the field of nutrition and basic health care are the United Nations International Children's Education and Relief Fund (UNICEF), the Pan-American Health Organization (PAHO), the World Health Organization (WHO), the Canadian International Development Association (CIDA), and the Caribbean Food and Nutrition Institute (CFNI). CFNI has a cooperative agreement with the Ministry of Health to provide technical support in the area of training, data collection, and policy analysis, and is currently providing technical assistance for a food consumption survey. PAHO and WHO are providing training and technical support for the IMCI initiative, while CIDA is providing assistance to upgrade the health information system in the specific areas of malaria and tuberculosis.

F. Bank strategy and rationale for involvement

1.27 The Bank's strategy in Guyana, expressed in document GN-2228, includes among its primary objectives strengthening the implementation capacity of the public sector and the reduction of poverty. The proposed program is consistent with Bank strategy and the PRSP, as it will strengthen the government's capacity to respond to the malnutrition problem among poor women and pre-school children, as well as support the reduction of malnutrition-related morbidity and mortality, thus contributing to the reduction of poverty.

1.28 As mentioned earlier, the Bank previously financed milk and rice distribution under SIMAP I and II. However, SIMAP I and II focused only on the distribution of food and did not successfully implement nutrition education nor integrate its activities into the primary health care system of the Ministry of Health, resulting in unfavorable evaluations. For these reasons, and in light of the continued high rates of observed acute malnutrition, the Bank and the government agreed to undertake a more focused nutrition intervention to be executed by the Ministry of Health which would emphasize the integrated management of mother and child nutrition and actions to promote behavioral change.

II. THE PROGRAM

A. Objectives and description

2.1 The objective of the program is to reduce malnutrition among women and young children in poor communities in Guyana. To achieve this objective, the operation will focus on three areas of intervention: (i) child feeding practices; (ii) anemia reduction; and (iii) institutional strengthening and impact evaluation.

2.2 The program's actions will be targeted to districts in the rural coastal area, where nutritional vulnerability is concentrated, and prioritized according to the SIMAP poverty map. Within each priority district, the selection of participating health centers will be made in order to assure that all ethnic groups are represented taking into account group-specific rates of malnutrition. Within these constraints, rural health centers will be given preference over urban ones.

B. Component 1: Child feeding (US$3.5 million)

2.3 The objective of this component is to increase the levels of exclusive breastfeeding during the first six months of life and improve practices of complementary feeding of young children between six and 24 months of age. To achieve this objective, two types of activities will be financed in a coordinated manner: (i) a training and information, education and communication (IEC) program at the primary health care clinic and community levels to create the conditions for nutritional behavioral change and (ii) a food coupon scheme to increase selected food availability to the poorest families.

2.4 In the areas of training and IEC, messages will focus on early initiation of breastfeeding, promotion of exclusive breastfeeding in infants less than six months old, appropriate complementary feeding practices and use of the food coupon to finance the purchase of appropriate weaning foods (see 2.5 below). Materials design, production and dissemination, training, supervision, air time and other related expenses will be financed. Audiences and modalities include:

a. In-service training for and supervision of primary health care workers at the primary health care clinic and hospital level, using existing training modalities. This training will emphasize the improvement of communication skills and include strengthening of the nutrition component of the recently launched Integrated Management of Childhood Illness (IMCI) initiative and building on successful training efforts through the Baby Friendly Hospital Initiative;

b. National media campaigns; and

c. Community-based interventions in targeted communities, such as training and supervision of local counselors to provide support to breastfeeding mothers, relay messages on the appropriate frequency of complementary

feeding and desirable food patterns, and share specific recipes for improved complementary food.

2.5 In the area of complementary feeding after six months of age, the program will finance a food coupon to be distributed to mothers of children between 6-24 months of age through health centers during regular preventive health care visits. Given the additional tasks associated with the administration of the coupon at the health clinic, a monetary stipend for participating clinic staff will also be financed. The coupon will provide the full amount of daily calories (approximately 422 calories) required from complementary foods for a child 6-8 months of age based on Caribbean standards. This represents 52% of the total caloric requirement for a child this age, 44% of the total requirement for a child age 9-11 months, and 30% for a child age 12-24 months. The approximate cost of providing this energy through the typical weaning foods in Guyana, which will be eligible to be purchased with the coupon (cornmeal, barley, plantain flour and powdered milk), is US$5 per child per month.[6] Approximately 25,000 young children will receive coupons over the life of the project. The coupon scheme will be scaled up gradually to allow for adjustment of program procedures specified in an initial version of the program operating regulations, while the financing for the coupon will follow the Bank's recurrent cost policy. In addition, materials and a training and supervision program for participating grocers will be implemented to assure acceptance of coupons, appropriate use of coupons and fluidity in the process of cashing coupons.[7]

C. Component 2: Anemia reduction (US$1.0 million)

2.6 This component seeks to reduce anemia prevalence in young children 6-24 months and pregnant women, focusing on the improvement of compliance with pre- and post-natal micronutrient supplementation regimens and the modification of diet to assure iron absorption. Activities to be financed include purchase and distribution of encapsulated micronutrient (iron, zinc, vitamin A) sprinkles[8] for children 6-24 months and accompanying training and IEC activities on the use of sprinkles in conjunction with food coupons. As sprinkles have not been utilized among adults, a pilot activity on the provision of sprinkles to pregnant women will also be carried out in selected project areas. The evaluation

[6] Project team estimates show that the financial cost of implementing the coupon scheme is significantly less than the physical distribution of food.

[7] During project preparation, an assessment of grocer capacity to stock relevant foods, to accept food coupons and to cash these coupons was carried out in targeted program communities. While training and supervision needs were identified and will be financed by the program, grocers were deemed able to carry out program-related tasks. In addition, grocers viewed the program as a mechanism through which to increase business.

[8] 'Sprinkles' has been developed by researchers at the University of Toronto and tested for use with young children in various countries including Ghana, Kenya, and Mongolia. Sprinkles come in powder form in a sachet, and are mixed into porridge or similar food. The powder does not change the color or taste of the food, and has been found to be a more acceptable method of micronutrient supplementation among vulnerable groups.

will explore whether for women, adherence to a micronutrient supplementation regime is greater through tablets or sprinkles.

D. Component 3: Institutional strengthening and impact evaluation (US$0.75 million)

2.7 This component seeks to strengthen the Ministry of Health in the area of monitoring and evaluation of nutritional policies and programs.

a. Information systems and epidemiological surveillance. This sub-component will support government in the development, testing and implementation of nutrition and MCH information system modules, in coordination with other initiatives in this area. In the area of surveillance, support will be provided to a future round of the Household Income and Expenditure Survey (HIES) for the addition of a nutrition module to collect data on anthropometry and caring practices, the construction of a nutritional risk map and a nutrition cost monitoring system. Data from the HIES will permit further detailed analysis of the levels and causes of the anthropometric outcomes described in chapter 1.

b. Evaluation of program outcome. A rigorous evaluation of the proposed interventions using before and after techniques will be financed, in order to provide feedback on program design. *Final outcome* indicators to be measured will include levels of malnutrition, anemia, exclusive breastfeeding and complementary feeding, while *intermediate outcomes* such as assessments of appropriate management of sick and malnourished children at health facilities and maternal hemorrhage rates will also be tracked. A baseline survey of approximately 1,000 children in prospective program areas will be carried out before program activities (coupons, sprinkles, IEC) begin. A follow up survey of these same children (longitudinal data) will be carried out approximately 9 and 18 months after program initiation. Since the program will expand in phases, a sub-set of the survey sample with delayed entry into the program may be able to serve as a valid comparison group provided there is no self-selection among participating health centers in terms of timing of entry into the program. Finally, a smaller sub-sample of parents will be selected, interviewed, and observed to assess their knowledge, attitudes, and practice (KAP) in order to evaluate the performance of the education and communication component of the program. The results of the impact evaluation will be used to adjust or modify the program when it is taken over by the Government.

c. Other technical assistance. A small pool of funds will be set aside for technical assistance to the Ministry in designing the coupon and a training scheme for shopkeepers (see paragraph 2.5), for the review and redesign of the nutrition related components of the curriculum at the school for nursing, and for a study on community based initiatives for reducing malnutrition among Amerindian communities in the hinterland area.

E. Cost and financing

2.8 The total cost of the operation is US$6.412 million, of which US$5 million will be financed with a Bank loan drawn from the Fund for Special Operations and a counterpart contribution of US$1.412 million. The breakdown of program costs and financing is presented in Table 2.1.

Table 2.1
TOTAL PROJECT COSTS
(US$ 000)

		TOTAL		%
INVESTMENT CATEGORIES	**BANK**	**LOCAL**	**TOTAL**	**Total**
1. ADMINISTRATION	**982**	**49**	**1,031**	**16.1**
1.1 Salaries	697	44	741	11.6
1.2 Monitoring & Evaluation	226	0	226	3.5
1.3 Operating Costs	59	5	64	1.0
2. DIRECT COSTS	**3,813**	**1,198**	**5,011**	**78.1**
2.1 Coupons	1,251	1,194	2,445	38.1
2.2 Sprinkles – Children	564	0	564	8.8
2.3 Sprinkles - Pregnant Women	352	0	352	5.5
2.4 Media & Communications	880	0	880	13.7
2.5 Training Materials & Delivery	766	4	770	12.0
3. TECHNICAL ASSISTANCE	**110**	**0**	**110**	**1.7**
3.1 Studies	110	0	110	1.7
SUB-TOTAL	**4,905**	**1,247**	**6,152**	**95.9**
4. CONTINGENCIES	**45**	**14**	**59**	**0.9**
4.1 Contingencies	45	14	59	0.9
5. FINANCING COSTS	**50**	**151**	**201**	**3.1**
5.1 Interest	0	105	105	1.6
5.2 Credit Fee	0	46	46	0.7
5.3 Supervision and Inspection	50	0	50	0.8
GRAND TOTAL	**5,000**	**1,412**	**6,412**	**100.0**
% by source (rounded)	**78**	**22**	**100**	

III. PROGRAM EXECUTION

A. The borrower, guarantor and executing agency

3.1 The Borrower is the Government of Guyana. The loan will be executed by the Ministry of Health through its Health Reform Unit. This Unit has lead the execution of the Health Reform Technical Cooperation (ATN-SF-5834-GY) over the last several years, and is in charge of coordination between donor and lender organizations and the Ministry. The executing agency will be advised by the Steering Committee on Nutrition, a broad-based committee that informs the government on nutrition related issues.

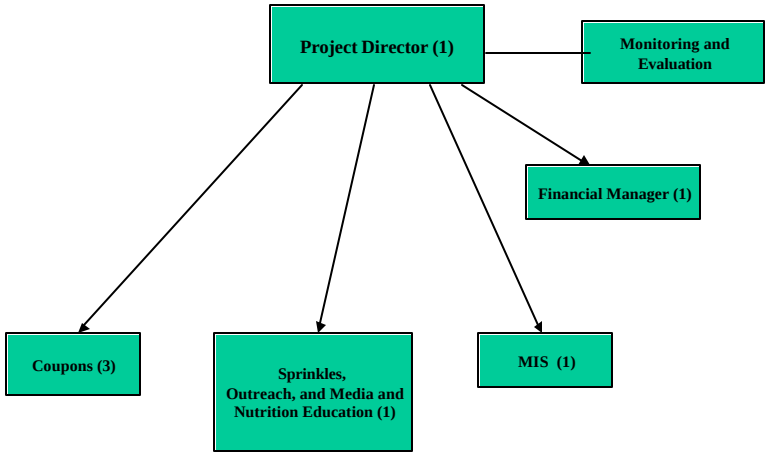
B. Program execution and administration

3.2 A program execution unit (PEU) in the Health Reform Unit of the Ministry of Health will be responsible for the overall technical coordination, administration, procurement, and reporting to the Bank of project activities. The organizational units in the Ministry of Health (MOH) with core responsibilities in each of the project components will be responsible for program execution. These units are: (i) the Maternal and Child Health Unit for the IMCI, the nutritional management of infants, and the distribution of micronutrient supplements and the coupon; (ii) the Food Policy Unit, for the development and delivery of training in nutrition education for health workers; and (iii) Health Statistics Unit, for the nutrition surveillance and health information systems.

3.3 The PEU will consist of a program director with overall responsibility for the execution of the operation. A financial specialist will be responsible for financial reporting, a management information systems (MIS) specialist will set-up and operate the MIS for the operation, and 4 technical staff will be responsible for the day to day operation of the coupon, sprinkles, and education and training activities. The organizational chart of the PEU is presented in Figure 3.1.

Figure 3.1
GUYANA
Basic Nutrition Program
(GY-0068)

Project Management Unit



C. Execution of component 1: child feeding

1. Training and information, education and communication (IEC)

3.4 Training and supervision of health care workers. The operation will finance the design of materials and delivery of training to primary health care workers. Training will be in both nutrition education and counseling skills. The target group includes nurses/midwives, nurses' aides, community health workers, health visitors, and medexs. The design of material and delivery will be contracted out to an international firm with expertise in this area. The Food Policy Unity of the Health Education Department will have technical responsibility for the supervision of the firm; staff from this Department and from MCH will also receive training (training of trainers), and will be responsible for carrying on the training activities at the end of the project, and for performing the in-service supervision of health care workers. The schedule of training will be integrated into the regular training cycle of the MCH Unit, including the IMCI training that is currently taking place. A total of 700 person-days of training are budgeted in the program.

3.5 Information, education and communication. As part of the behavioral change aspect of the operation, a communication campaign will be designed and pre-tested during the first 6 months of the project, and then disseminated through print media, radio, and TV. The campaign will focus on breastfeeding promotion and weaning practices. In addition, printed materials on safe child weaning practices will be designed and distributed throughout health centers. The development and

testing of the communications package will be contracted out to a private firm. Technical responsibility for this activity will reside with the Food Policy Unit of the Health Education Department; the MCH Unit will be responsible for disseminating printed materials through well-baby clinics.

2. Food coupons

3.6 A food coupon worth US$5 per month will be provided to the parent of children age 6-24 months during their visit to the well-baby clinic. The protocol for preventive health check-ups in Guyana is monthly up to 12 months of age, and then every two months; coupon distribution will follow this protocol. Thus parents of children age 6-12 months will receive one coupon per month when they report to the health center for routine growth monitoring and counseling; parents of children between 12 and 24 months of age will receive two months worth of coupons during their routine health check-up.

3.7 Coupons will be printed on secure paper from an international firm specializing in the manufacturer of currency and other secure paper instruments; in addition to built-in security features, each coupon will have a unique serial number and an expiry date.

3.8 Targeting of beneficiaries. The program will employ geographic targeting to select beneficiaries. Health centers in the rural coastal region (regions 2, 3, 4, 5 and 6) that fall in the poorest enumeration district according to the poverty map will be eligible to participate in the coupon scheme.[9] All children age 6-24 months residing in the catchment area of the health center will be eligible to receive coupons, provided they register at the clinic and go for check-ups. Only health centers that have been certified (see below) will be able to participate in the program. The final set of health centers will also include several hinterland health centers that serve predominantly Amerindian communities; the remaining health centers will be selected to include a mix of Afro and Indo communities. The selection of health centers will be done by the PEU in collaboration with the MCH Unit, and submitted to the Nutrition Steering Committee for final approval. The final list of health centers must be approved by the Bank and specified in the operating manual prior to first disbursement.

3.9 Registration of beneficiaries and coupon redemption. Program registration will occur at the health center during a child's health-care visit. The parent or guardian must provide proof of identification of the child (birth certificate or vaccination card) and of the parent or guardian, including address to verify place of residence. The vaccination health card will be the primary proof of registration in the program. The health card will be filled out at each visit, and if a coupon is issued, the serial number of the coupon will be written on the health card, and the name of the child written on the coupon. Both the coupon and the health card must be shown in order to exchange the coupon at the store; coupons will be valid

[9] The poverty rate in the poorest enumeration districts is 70%, compared to a national rate of 36%.

for 6 months only after which they can no longer be redeemed. Each participating health center will submit its program beneficiary list to the PEU for program monitoring and financial accounting. In addition, information on the number of coupons issued, coupon serial number, and beneficiary name, will also be submitted by the health center to the PEU on a monthly basis.

3.10 Health center certification. In order to participate in the coupon scheme, a health center must demonstrate that it is able to provide nutrition education, counseling, and growth monitoring services. A health center will be 'certified' if it has the full cadre of recommended staff given the size of its catchment population, if this staff has benefited from the nutrition education and counseling training, if it has adequate equipment and supplies, including growth monitoring charts, scales, measuring boards, and printed materials, and at least two grocery stores in the immediate vicinity have been registered to receive coupons (see below). The certification of health centers will be done by the PEU in collaboration with the MCH Unit, and must be submitted to the Bank for its no objection.

3.11 Shopkeeper certification. Program beneficiaries will exchange their coupons for food at designated retail outlets. Retail outlets must be certified as eligible by the PEU. In order to be eligible, the retail outlet must go through a small orientation and training program, where they are explained the rules and regulations of the program and agree to abide by these rules. Store owners will also be taught how to verify the authenticity of the coupon, and of the person exchanging the coupon. Certified retail outlets will be given a registration card and number. Random monitoring of shopkeepers will be done to verify that they are abiding by the rules of the program. Shopkeepers in violation of the rules will lose their certification.

3.12 Coupon redemption. Coupons will be redeemed by shopkeepers for cash at post office outlets. There are over 100 outlets through out Guyana. Shopkeepers must present their registration card when cashing coupons. The coupons will be cancelled by the post office, and returned to the coupon unit of the PEU for reimbursement of face value plus a small processing fee (25 cents per coupon). The PEU will verify that the coupon is authentic, that it was issued to a legitimate beneficiary, and that it has not expired. An MIS will be designed to record and keep track of the number of coupons issued by health center and beneficiary characteristics, and the number of coupons redeemed. Redeemed and cancelled coupons will be destroyed.

D. Execution of component 2: anemia reduction

3.13 The execution of the IEC activities under this component will be the same as in component 1 (see para. 3.5) and will be performed by the PEU with the technical support and monitoring of the Food Policy Unit. The design, pre-test, and subsequent dissemination will be contracted out to a firm according to standard Bank procedures.

3.14 Sprinkles for children. The execution of sprinkles will follow that of the coupon distribution in terms of timing and responsibility. Sprinkles will be provided to children along with the food coupon at the time of check-up. Hence children age 6-12 months will be given a one-month supply of sprinkles (sachets), while those age 13-24 months will be provided two months worth of sachets. Upon registration into the program, the parent will be taught how to use the sprinkles. Follow up will be done by community health workers and resource people through occasional home visits, as well as at each health check-up at the clinic. The PEU will be responsible for the procurement of the sprinkles; the storage and distribution will be handled through the Ministries regular drug distribution channels, and the MCH unit will be responsible for the distribution to program beneficiaries.

3.15 Sprinkles for women. The pre- and post-natal distribution of sprinkles to women will be conducted as a pilot in this operation. Sprinkles will be distributed to approximately 6,000 women during the life of the project. Execution responsibilities will be the same as those for children, except that distribution will take place during anti-natal clinics as well as at well baby clinics for women who had a pregnancy in the last 6 months. Only health centers that have been program certified will be eligible to participate. Given the size of this activity, only 5-10 health centers will participate in the pilot, depending on catchment size.

E. Execution of component 3: Institutional srengthening and impact evaluation

3.16 Information systems and epidemiological surveillance. An expert in health information systems will be contracted to assist the MCH Unit in the revision of information collected at the clinic level for monitoring and supervision. The consultant will work with the Health Information Unit on the design of specific summary indicators that will be provided to the MCH and Food Policy Unit to strengthen the quality and relevance of the information used for monitoring. Responsibility for the contracting of the expert will reside with the PEU.

3.17 Impact evaluation. Data collection for the impact evaluation will be contracted out to the Bureau of Statistics. Trained nurses from the Ministry of Health staff will be used to collect the anthropometric and anemia related information, as was done in the recently completed Multiple Indicator Cluster Survey (MICS) study. The execution of the impact evaluation, including supervision and coordination with the Bureau of Statistics, data analysis, and writing of reports, will be contracted out to a local firm with expertise in the field of nutritional epidemiology and research design.

3.18 Other technical assistance activities. Responsibility for the contracting of experts to assist in the review and redesign of the curriculum at the nursing school, the design of the actual coupon, and the design of the training for shopkeepers will be with the PEU. For the review of the nurse curriculum, the Food Policy Unit will have overall technical responsibility for the adjustments to the curriculum; for the

study of options among Amerindian communities, the Ministry of Amerindian Affairs will provide technical guidance.

3.19 The precise executing arrangements and regulations are specified in the operating manual, which will govern the execution of the operation.

F. Other aspects of execution

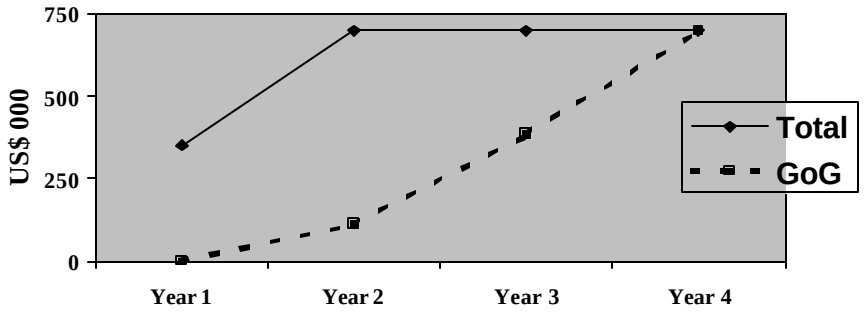
1. Execution and disbursement schedule

3.20 The execution period for the loan will be 4 years, and the disbursement schedule is shown in Table 3.1 below. The financing of the coupons is subject to the Bank's recurrent cost financing policy, so that this component of the project must be fully taken over by the government by the final year of the project. As a result, the counterpart contribution represents 22% of the total cost of the operation, and in year 4, the counterpart contribution represents 45% of total planned spending for that year, as the government will take over the full cost of the coupons. Figure 3.2 depicts the total cost of the coupon component of the project by year, and the part financed by the government. Government's share of the coupon cost is 16% in year 2 and 55% in year 3, before rising to 100% in year 4. The authorities have requested this schedule of co-financing in order to coincide with the availability of resources from E-HIPC debt relief.

Table 3.1
DISBURSEMENT SCHEDULE
(US$ 000)

Source	Year 1	Year 2	Year 3	Year 4	Total	%
IDB	1,230	1,572	1,311	887	5,000	78
Local	61	169	430	752	1,412	22
Total	1,291	1,741	1,741	1,639	6,412	100
% / year	**20**	**27**	**27**	**26**	**100**	

FIGURE 3.2
COUPON FINANCING BY YEAR AND SOURCE



2. Procurement of goods and services

3.21 Direct contracting is recommended for the procurement of sprinkles, for the design and secure printing of the coupons, and the hiring of a local firm to carry out the impact evaluation. Sprinkles is currently only produced by Heinz-Canada through an agreement with the Departments of Pediatrics and Nutritional Sciences at the University of Toronto. Through this agreement, Heinz has agreed to manufacture and sell Sprinkles on a cost recovery basis only. Researchers at the University of Toronto have agreed to work with the Ministry of Health in developing an appropriate formula for Sprinkles in Guyana, which will then be manufactured by Heinz at a cost of 3 cents per sachet.

3.22 It is recommended that the food coupons be printed by De La Rue, the world's largest commercial security printer and papermaker. This firm presently prints the passports and banknotes in Guyana, and has also been the printer of the stamps in the Jamaican Food Stamp Program. De La Rue is known world-wide for the manufacturer of high quality, safe, and secure coupons and similar documents; sole sourcing of this activity will ensure that the coupons are printed on secure paper outside the country, thus reducing the risk of fraud.

3.23 It is recommended that the impact evaluation of the operation be contracted out to a local firm that understands the local context in Guyana and has extensive experience in research design in nutritional epidemiology in the region. The proposed firm, Development Associates Inc., is the only local firm with the technical expertise and experience in nutritional epidemiology necessary to carry out the proposed impact evaluation.

3.24 Procurement of all other goods and contracting of consulting services will be governed by the Bank's standard procurement procedures. International

competitive bidding will be used to procure consulting services in excess of US$250,000 or goods in excess of US$350,000. No construction work will be financed by this operation.

3. Rotating fund

3.25 A revolving fund of no more than 5% of the loan amount will be established during the execution of the program. The rules of use of the fund will be detailed in the Operating Manual.

4. Special conditions prior to disbursement

3.26 The following conditions prior to *first* disbursement must be met to the Bank's satisfaction: (i) presentation of the Operating Manual for the program in accordance with the terms previously agreed upon with the Bank, including terms of reference for all key activities; (ii) initiate procedures to contract the firm that will design and deliver the nutrition training component of the operation, as evidenced by a short list of potential firms obtained from a public tender; and (iii) evidence that the program director of the PEU has been contracted.

3.27 In addition, prior to first disbursement of the coupon component of the operation, a signed memorandum of understanding (MOU) between the Guyana Post Office Corporation and the Ministry of Health must be presented to the Bank's satisfaction. This MOU must outline the terms and conditions under which the food coupon will be redeemed by shopkeepers at post office outlets.

3.28 Notwithstanding that the executing agency has not complied with the conditions prior to first disbursement, the Bank may disburse up to US$300,000 to allow the initiation of program activities.

5. Accounting, financial audits, monitoring and evaluation

3.29 The PEU will be responsible for: (i) preparing and submitting to the Bank disbursement requests and justification of advanced funds; (ii) maintaining adequate financial and accounting records of the program, in accordance with Clause 7.01 of the loan contract general conditions; (iii) preparing and submitting to the Bank the audited financial reports, including a semi-annual report on the status of the revolving fund; (iv) maintaining specific and separate commercial bank accounts for the management of the Bank's financing and local counterpart funds; and (v) maintaining an adequate disbursements supporting documentation filing system for eligible project expenditures.

3.30 External financial audits. The PEU shall present to the Bank annual audited financial statements of the program within 120 days of the end of each fiscal year. Also, semi-annual audit reports shall be presented to the Bank within 60 days after the end of each semester. The audit reports will be prepared in accordance with terms of reference previously approved by the Bank. The audit works will

be carried out under the Bank's external audit requirements by a private audit firm acceptable to the Bank and selected under the Bank's bidding procedures (Document AF-200). The audit costs will be financed through the loan.

3.31 Monitoring and evaluation. The Bank and the executing agency will hold annual meetings to monitor and review the execution of the program, and to discuss the results of the impact evaluation activities. The executing agency will invite the Bank to participate in presentations and discussions related to the results of the baseline survey, and each of the two subsequent surveys to measure program impact. These discussions are scheduled to take place at the end of the first, second, and third year of the program. The second such discussion will coincide with the mid-term review of the operation. The final results of the impact evaluation, scheduled to be completed by the end of the third year of program implementation, will be used by the Bank and the Government to define the future direction of this program when it is taken over by the authorities at the end of the fourth year.

IV. FEASIBILITY, BENEFITS AND RISKS

A. Institutional and financial feasibility

4.1 With the exception of the food coupon, all of the activities in this operation are designed to review and strengthen already existing activities and responsibilities in the Ministry of Health. Indeed, the main lesson learned from the nutrition component of SIMAP III was that because those activities were carried out independently and not integrated into the existing activities of the Ministry of Health, the nutritional impact of that program was negligible. In contrast, the training and communications activities in the current program will be executed by the relevant units of the line ministries, who will also receive capacity strengthening in order to continue the activities once the project financed technical assistance ends. And while the introduction of sprinkles represents a new product within the primary health care system, the MCH Unit already has an established iron supplementation program in place, which will be used to distribute sprinkles.

4.2 The introduction of the food coupon represents both an institutional and financial challenge in terms of sustainability. The cost of the coupon program will be approximately US$700,000 by the end of the program, and will be fully borne by the government through counterpart financing. This expenditure represents less than 0.2% of GDP, while total public expenditure on health (4%) and poverty alleviation programs (1.1%) represent 5.1% of GDP. The E-HIPC debt relief, which commenced with interim assistance from selected donors in November 2000, is eventually expected to provide a net flow of resources equivalent to 4% of GDP in the first few years —a significant portion of these additional resources are to be targeted towards the social sectors and poverty alleviation, implying that extra resources will be available to finance the program at the end of the loan. The institutional experience and capacity to run the coupon program will have been established through the loan operation, although in the long run these activities may be better placed in the Ministry of Human Services, which currently executes the pension program that also operates through the post office.

B. Environmental and social feasibility

4.3 The social impact of the program will be significant, as it is directed to the improvement of poor women's and children's nutritional status. Through reduction of nutritional vulnerabilities, it is expected that the incidence of maternal hemorrhage, low birth weight infants and infectious disease-related morbidity and mortality will decrease, along with their associated negative effects on maternal and child survival and child growth and development. Further, due to the synergistic nature of nutrition improvements, the program would contribute to improving the effectiveness of other health interventions, thereby improving the impact of public spending on health.

4.4 As mentioned on paragraph 1.18, the nutrition problem among Amerindians in the hinterland is linked to diet diversity rather than food insecurity. However, there are several Amerindian communities located in the regions targeted in this operation with access to health clinics and markets, and several of those will be chosen to participate in the food coupon scheme. In addition, the operation will finance a study, in collaboration with the Ministry of Amerindian Affairs, to look at options for local initiatives to reduce the chronic malnutrition problem encountered in the hinterland areas.

4.5 The proposed program does not finance construction or health interventions that would generate hazardous wastes. As such, the program is not expected to generate negative impact on the environment.

C. Risks

4.6 Shortage of qualified personnel. This is a major issue through out the public sector in Guyana, and is linked to both low salaries and governance issues. Indeed part of Guyana's nutrition problem can be traced to high turnover and the need for constant training among health care workers. The program attempts to mitigate this risk by financing the training of trainers, establishing a system of on-going in-service training, and strengthening the nutrition related components of the curriculum in the school of nursing, where most primary health care workers receive their qualification.

4.7 Leakage of food coupon. A well-known risk among food coupon programs is that shopkeepers may accept the coupon for the purchase of ineligible items. To address this risk, the program finances the design and delivery of a training program for shopkeepers that wish to participate in the program. The program also finances a system of random monitoring of shopkeepers to ensure they are following program rules.

4.8 Food price increases. There exists a risk that shopkeepers in small, isolated communities may raise the price of the four items eligible to be purchased through the coupon. To mitigate this risk, the operation includes an on-going, random monitoring system for shopkeepers to ensure they are following program rules. The operation also requires that at least two retail outlets be certified in the immediate vicinity of the health clinic to reduce monopolistic behavior. Finally, coupons can be collected at any well-baby clinic during the week, and not on a specific fixed date, so there is not expected to be a sudden flood of coupons in the community on any one day, thus reducing the potential benefit of price gauging by retailers.