

UNCLASSIFIED

112

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

GUYANA
PROJECT PAPER
WEANING FOOD DEVELOPMENT

LAC/DR:78-25

Project Number:504-0073

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT
PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS PART I

1. TRANSACTION CODE: A (ADD), C (CHANGE), D (DELETE)

2. DOCUMENT CODE: PAF 5

3. COUNTRY/ENTITY: Guyana

4. DOCUMENT REVISION NUMBER:

5. PROJECT NUMBER (7 digits): [504-0073]

6. BUREAU/OFFICE: A. SYMBOL: LA, B. CODE: [5]

7. PROJECT TITLE (Maximum 40 characters): [WEANING FOOD DEVELOPMENT]

8. PROJECT APPROVAL DECISION: A (APPROVED), D (DISAPPROVED), DE (DEAUTHORIZED)

9. EST. PERIOD OF IMPLEMENTATION: YRS. [03], QTRS.

10. APPROVED BUDGET AID APPROPRIATED FUNDS (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		C. 1ST FY 78		H. 2ND FY 79		K. 3RD FY 80	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) FN	322	314		275		135		90	
(2)			4						
(3)									
(4)									
TOTALS									

A. APPROPRIATION	N. 4TH FY		O. 5TH FY		LIFE OF PROJECT		11. PROJECT FUNDING AUTHORIZED		
	D. GRANT	P. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN	(ENTER APPROPRIATE CODE(S))	A. GRANT	B. LOAN
(1)					500		1 = LIFE OF PROJECT 2 = INCREMENTAL LIFE OF PROJECT	2	
(2)									
(3)									
(4)									
TOTALS									

12. INITIAL PROJECT FUNDING ALLOTMENT REQUESTED (\$000): 2

13. FUNDS RESERVED FOR ALLOTMENT: PROJECT FUNDING AUTHORIZED THRU FY [80]

12. INITIAL PROJECT FUNDING ALLOTMENT REQUESTED (\$000): 2

A. APPROPRIATION	B. ALLOTMENT REQUEST NO. 2	
	C. GRANT	D. LOAN
(1) FN	275	
(2)		
(3)		
(4)		
TOTALS		

13. FUNDS RESERVED FOR ALLOTMENT

TYPED NAME (Chief, SRP/FSM/FSR): _____

SIGNATURE: _____

DATE: _____

14. SOURCE/ORIGIN OF GOODS AND SERVICES: 000, 941, LOCAL, OTHER

15. FOR AMENDMENTS, NATURE OF CHANGE PROPOSED: _____

FOR PPC/PIAS USE ONLY	16. AUTHORIZING OFFICE SYMBOL	17. ACTION DATE	18. ACTION REFERENCE (Optional)	ACTION REFERENCE DATE
		MM DD YY		MM DD YY

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS

PART II

Name of Country: Guyana
Name of Project: Weaning Food Development
Number of Project: 504-0073

Pursuant to Part I, Chapter 1, Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize a grant to the Government of Guyana of not to exceed Two Hundred and Seventy-Five Thousand United States Dollars (US\$275,000) to help in financing certain foreign exchange and local currency costs of goods and services required for the project as described in the following paragraphs:

The project has as its purpose the establishment within Guyana of the capacity for processing and distributing a nutritious weaning food made from locally grown food crops. The total concept of the project embraces a three-phase effort, of which this project would constitute Phase I, to determine the feasibility of developing a weaning food to be initially made from imported Title II food commodities which would be acceptable to consumers. The project, which include a PL 480 Title II component outside this grant, provides for the manufacture and distribution of a food supplement (weaning food) to help alleviate malnutrition among pre-school children. The food is to be pre-cooked, using low-cost extrusion cookers, and distributed predominantly through retail outlets, though a small amount (15 to 20%) will be distributed through maternal/child health clinics. The project is designed as a three-year pilot activity to study the feasibility of this method of providing food supplements to malnourished children and to establish a basis for extending the approach as an on-going nutrition intervention. It includes market testing and an information program for consumers.

If the pilot project is successful, it is planned to substitute locally grown food combinations, over time, on the basis of different product formulations with a view toward developing both a nutritiously rich supplement which is acceptable to the target group (pre-school children) and at a reasonable price.

I approve the total level of A.I.D. appropriated funding planned for this project during its three-year pilot phase of not to exceed Five Hundred Thousand United States Dollars (US\$500,000), all of which is to be grant funded during the period FY 1978 through FY 1980. Accordingly, in addition to the grant funds of up to US\$275,000 which I have authorized above, I approve further increments during that period of grant funding up to \$225,000, subject to the availability of funds, in accordance with A.I.D. allotment procedures.

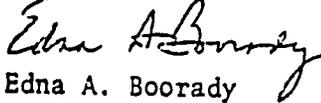
On receipt of the allotment of funds, the Mission will execute the project agreement with the Government of Guyana in accordance with A.I.D. regulations and Delegations of Authority and the following conditions precedent.

Conditions Precedent to any Disbursement:

Prior to any disbursements, or issuance of any commitment documents for equipment under the project agreement, the Government of Guyana shall furnish to A.I.D. in form and substance satisfactory to A.I.D.: (a) a list of required equipment; and (b) a time phased implementation plan for carrying out the Project.

Source and Origin of Goods and Services:

Except for ocean shipping, goods and services financed by A.I.D. under the project shall have their source and origin in the United States (Code 000 of the A.I.D. Geographic Code Book), or in Guyana, except as A.I.D. may otherwise agree in writing.


Edna A. Boorady
Director
USAID/Guyana

September 21, 1978
Revised

USAID/GUYANA
PROJECT PAPER
WEANING FOOD DEVELOPMENT

PROJECT NO: 504-0073
September 30, 1978

PROJECT PAPER
WEANING FOOD DEVELOPMENT

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AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT PAPER FACESHEET		1. TRANSACTION CODE <input checked="" type="checkbox"/> A ADD <input type="checkbox"/> C CHANGE <input type="checkbox"/> D DELETE		PP
3. COUNTRY ENTITY Guyana		2. DOCUMENT CODE 3		
5. PROJECT NUMBER (7 digits) <input type="checkbox"/> 504-0073 <input type="checkbox"/>		6. BUREAU/OFFICE A. SYMBOL LA B. CODE <input type="checkbox"/> 5 <input type="checkbox"/>		4. DOCUMENT REVISION NUMBER <input type="checkbox"/>
8. ESTIMATED FY OF PROJECT COMPLETION FY <input type="checkbox"/> 8 <input type="checkbox"/> 1 <input type="checkbox"/>		7. PROJECT TITLE (Maximum 40 characters) <input type="checkbox"/> Weaning Food Development <input type="checkbox"/>		
		9. ESTIMATED DATE OF OBLIGATION A. INITIAL FY <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> B. QUARTER <input type="checkbox"/> 4 <input type="checkbox"/> C. FINAL FY <input type="checkbox"/> 8 <input type="checkbox"/> 0 <input type="checkbox"/> (Enter 1, 2, 3, or 4)		

10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$1 -)						
A. FUNDING SOURCE	FIRST FY 78			LIFE OF PROJECT		
	B. FX	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL	243.6	31.4	275.0	433.6	66.4	500.0
(GRANT)	(243.6)	(31.4)	(275.0)	(433.6)	(66.4)	(500.0)
(LOAN)	()	()	()	()	()	()
OTHER U.S. 1.						
2.						
HOST COUNTRY	--	280.0	280.0	--	502.0	502.0
OTHER DONOR(S)						
TOTALS	243.6	311.4	555.0	433.6	568.4	1,002.0

11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY 78		H. 2ND FY 79		K. 3RD FY 80	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) FN	300	300		275.0		115.0		110.0	
(2)									
(3)									
(4)									
TOTALS				275.0		115.0		110.0	

A. APPROPRIATION	N. 4TH FY		Q. 5TH FY		LIFE OF PROJECT		12. IN-DEPTH EVALUATION SCHEDULED
	O. GRANT	P. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN	
(1) FN					500.0		MM YY <input type="checkbox"/> 1 <input type="checkbox"/> 7 <input type="checkbox"/> 9 <input type="checkbox"/>
(2)							
(3)							
(4)							
TOTALS						500.0	

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

1 = NO
2 = YES

14. ORIGINATING OFFICE CLEARANCE		15. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION	
SIGNATURE <i>[Signature]</i>	TITLE Director, USAID/Guyana	DATE SIGNED MM DD YY 09 28 78	

I. PROJECT SUMMARY AND RECOMMENDATIONS

A. Recommendations

The Project Development Team recommends the following:

- (1) Approval of the Project described herein for a total cost of \$500,000.
- (2) Approval of an AID grant of \$500,000.
- (3) Approval of a complementary request for P.L. 480 Title II - Sec. 206 project support for the production and distribution of the weaning food.

B. Grantee

The Grantee will be the Government of Guyana, acting through the Ministry of Economic Development. The Guyana Pharmaceutical Corporation, a Government-owned corporation, will be responsible for carrying out the Project through its Technical Director, Dr. Leslie Chin.

C. Project Summary

The purpose of the three year pilot Project is to establish the capacity and test the feasibility of the production and distribution in Guyana of a nutritious weaning food, made from indigenous commodities. The goal of the Project is to improve the nutritional status of Guyana's infants and pre-school children aged 4 months to 2 years of age. The Project envisages that approximately fifteen to twenty percent of the weaning food produced will be distributed free of charge to maternal and child health clinics throughout Guyana. No manufacture of a weaning food has previously been undertaken in Guyana.

The pilot Project responds directly to a Government of Guyana initiative to develop and distribute a nutritious food supplement using indigenous foods, specifically to alleviate malnutrition among pre-school children. As designed by the Project Team, the Project is an integrated approach to solving this priority development problem, malnutrition among pre-school children, using project funds on a grant basis, together with selected P.L. 480 Title II food commodity imports on a grant basis for the pilot phases of the Project. At the end of Phase I, an in-depth evaluation will be undertaken, based upon which the Project will be extended, modified or terminated,

as appropriate. Assuming that the pilot phase indicates that continuation of the Program is technically and economically feasible, a follow-on Project for Phase II (years 4 to 6) is contemplated, and thereafter Phase III (years 7 to 9).

The Project presently proposed for grant financing will include the equipment needed for production of the weaning food, such as the extrusion cooker and ancillary processing equipment, as well as the necessary packaging equipment and materials to market the product. It will also include vitamin and mineral premix to enrich the weaning food. The technical assistance component will provide the needed expertise to develop and distribute educational material on the nutritional advantage of the weaning food as a supplement to breast feeding and an informational campaign to acquaint the consumer with the weaning food. The technical assistance will also include assistance in product formulation and testing, plant design, equipment selection, installation and operational start-up, as well as market research.

The Government of Guyana will provide a suitable factory for the production, storage and distribution of the weaning food, and will finance the cost of the operational personnel. In addition, the Government will finance the costs of the locally produced components of the weaning food, namely, rice and sugar.

In addition, the Project includes a proposed grant of Title II, P.L. 480, food commodities during the three year pilot phase totalling 1,102 metric tons made up of four commodities - cornmeal, soy flour, milk powder and vegetable oil. Although no further project grant financing is contemplated beyond the three year pilot phase, Title II food commodities will continue to be required during Phase II, and perhaps into Phase III in reduced quantities assuming Project evaluation at the end of Phase I indicates that the Project is technically and economically sound.

The input of Title II, P.L. 480 commodities is essential for development of the weaning food since there are not sufficient locally produced food crops to permit even the modest quantities contemplated during the three phases of the Project.

D. Summary Financial Plan

	<u>FY 78</u>	<u>FY 79</u>	<u>FY 80</u>	<u>TOTAL</u>
<u>A.I.D.</u>				
Equipment and Materials	248,500	62,000	84,000	394,500
Market Research	11,500	23,000	10,000	44,500
Technical Assistance	5,000	10,000		15,000
Commodities	10,000	20,000	16,000	46,000
	<u>\$ 275,000</u>	<u>\$ 115,000</u>	<u>\$ 110,000</u>	<u>\$ 500,000</u>
 <u>GOG</u>				
Facilities and Personnel	265,000	70,000	70,000	405,000
Commodities	15,000	34,000	48,000	97,000
	<u>\$ 280,000</u>	<u>\$ 104,000</u>	<u>\$ 118,000</u>	<u>\$ 502,000</u>
 Project Total:	 <u>\$ 555,000</u>	 <u>\$ 219,000</u>	 <u>\$ 228,000</u>	 <u>\$ 1,002,000</u>

Based on the financial data included in the Project Paper the Project Committee finds the Project to be financially sound.

II. DESCRIPTION OF PROJECT

A. Background

1. Undernutrition in Pre-School Children:

prob.
Poor health and undernutrition, particularly among infants and pre-school children, are widespread in low income developing countries, such as Guyana. These problems stem largely from inadequate food intake due to poverty and from unsanitary conditions accompanied by endemic disease, and they are accentuated by inadequate knowledge of proper health and nutrition practices. As a result morbidity and mortality rates are high and quality of life is poor. Furthermore, poor health contributes to a drain on resources, both human and financial, that inhibits both economic and social development.

AID and other development agencies as well as the governments of many developing countries have recognized the serious nature of these health and nutrition problems and are actively seeking programs to overcome them.

A 1978 Health/Nutrition Sector Assessment^{1/} by AID has concluded that poor health and undernutrition are serious problems in Guyana. Although the Assessment notes that the existing data base in Guyana is weak, it concludes that the undernutrition among pre-school children is high and that programs to address this problem should be strengthened. The Assessment cites a 1971 National Food and Nutrition Survey^{2/} which revealed that less than half the pre-school children were of normal nutritional status; 18% of the children 0-5 were found to be moderately or severely malnourished (Gomez grades II and III) and an additional 43% were underweight (Gomez grade I). The 1971 study also indicated that undernutrition was more severe in rural areas (22 percent moderately or severely malnourished) than in urban areas (7%).

^{1/} Haverberg L. Et. Al. A preliminary assessment of the health/nutrition sector in Guyana. USAID/Guyana. May 1978.

^{2/} The National Food and Nutrition Survey of Guyana (1971), PAHO/WHO Scientific Publication No. 323 Washington, D.C. 1976.

More recent data collected through monitoring of maternal child health (MCH) clinics in Guyana during the period 1974 - 1976 confirmed the high continuing incidence of malnutrition. According to these data, 11-13% of the children 0-5 years attending MCH clinics suffered severe or moderate malnutrition and only 54-55% were normal.

The specific causes of undernutrition among pre-school children were not identified in the 1978 Assessment. However, it is generally accepted that the primary causes are associated with a set of factors including poverty-induced under consumption of food, disease, and lack of adequate nutrition/health knowledge. As cited in the Assessment:

"The socio-economic factors found to be associated significantly with the nutritional status of the 0-5 age group were ethnic grouping, household income, employment of the main provider, father's support and the nearness of piped water".

Accordingly it can be inferred that programs aimed at supplying low-cost foods for pre-school children, improved health conditions, and nutrition education should tend to alleviate malnutrition among pre-school children.

The Assessment also indicates that undernutrition does not appear to be a significant problem among school age children or adults. Thus nutrition programs directed to pre-school children clearly should be given priority in Guyana.

With respect to food consumption patterns in Guyana that relate to malnutrition, the National Food and Nutrition Survey reported that diet supplements provided to infants and young children often take the form of thin gruels or porridge made from plantain flour or sometimes plantain mixed with rice, wheat or corn flours. These are often used to extend or thicken milk and are fed by bottle. In other cases the porridge is spoon fed. In either case these products have limited nutritional value since they are little more than thin gels of starch, have low caloric density, and do not provide significant amounts of protein or essential vitamins and minerals.

More nutritious weaning foods, such as Cerelac and Nestum, are available on the market. However, these products are imported and are too expensive to be used by low income families in beneficial amounts.

The Guyanese practice of serving cereal based weaning food to pre-school children does, however, provide a basis for belief that improvements can be made using high calorie density, nutritionally balanced food supplements.

2. Current Government Policy - Undernutrition in Children:

The primary GOG program impinging directly on the nutritional status of pre-school children is a food distribution/health service/nutrition education effort channeled through Guyana's 150 MCH clinics. This program, administered by the Ministry of Health, delivers World Food Program and other donated foods together with its other services to mothers of 40,000 of Guyana's 150,000 pre-school children annually. In recent years mothers have been furnished Corn Soya Meal, milk powder, cheese and certain other commodities for take-home use. In addition, the health status of the children has been evaluated and mothers have been given guidance on health care and nutrition education.

The MCH program has suffered from several major deficiencies. First, the program has limited outreach in that it serves only a small proportion of the population. Fewer than 30% of the pre-school children attend MCH clinics some time during the year and less than 15% attend at any given time. Secondly, the food available for use in the program is for the most part ordinary family foods such as milk, meat, cheese and the like and, as a result, the food reportedly is often consumed by the whole family rather than given to pre-school children. This misuse of the food dilutes its effect and weakens it as a targeted nutrition intervention for pre-school children. Third, the food distribution system has not been effective in maintaining adequate food supplies at MCH clinics due to transportation and other logistics problems. Recently, however, this difficulty has been corrected through improved management procedures.

In addition to the MCH program the GOC has attempted to improve the nutrition and health status of the population through a broad spectrum of indirect interventions. These range from agricultural programs aimed at increased production of nutritious foods, marketing programs, and improvement of food distribution, to subsidies and price controls of basic staples to help assure availability of foods among low income groups. In addition, other GOC programs aim to improve income, employment, and other factors which indirectly lead to better health and nutrition.

The impact of indirect interventions on the nutritional status of pre-school children should be substantial when these programs have reached their goals. However, these programs require massive inputs and will need many years to become effective.

One of the recommendations arising from the 1971 National Food and Nutrition Survey was for local production of a low-cost nutritious weaning food which could serve the needs of the pre-school children. Recommendation 2-1-3 (b) of the Survey states:

"That low-cost weaning foods, based on rice, legumes, plantain flour and soybeans be manufactured industrially in Guyana, and that these foods be supplemented where necessary with iron, Vitamin A, thiamine, riboflavin, and niacin to meet internationally accepted levels".

Subsequently, at the Fifth Caribbean Health Ministers Conference held in 1973, a strategy to combat malnutrition in children under two years of age was enunciated:

"It is strongly recommended that before January 1, 1977 each Ministry of Health be enabled to purchase at a negotiated contract price from a food processor in their own country or at any rate in the Caribbean, adequate quantities of an infant weaning food made up according to the Ministry's own specifications. (The constituents of the food may well include imported or even donated foods, but at least the processing and packaging should be local)".

These recommendations are embodied in Recommendation 3.10 of the Food and Nutrition Policy of Guyana which has been prepared by the Ministry of Health.

Based on these statements and recommendations the GOG wishes to address the problem of undernutrition among pre-school children through action programs with more rapid results than current programs. The development and broad scale distribution of a food supplement designed specifically to alleviate malnutrition among pre-school children has been selected by the GOG as the program of choice.

In March 1977 the Government of Guyana designated the Guyana Pharmaceutical Corporation, (GPC) a public sector corporation, as the organization responsible for production and marketing of a weaning food product. In February 1978 the GPC approached USAID for assistance in building and equipping a weaning food factory and for ingredients to make the food during the initial stages of factory operation.

B. Detailed Description of Project

1. The Guyana Pharmaceutical Corporation (GPC) Proposal:

The proposal GPC submitted to AID called for a three-year activity to:

(1) build, equip and operate a factory for the manufacture of a nutritious food supplement for pre-school children; (2) develop a distribution system capable of national coverage; and (3) provide a means for continuing food production and distribution if evaluation of the project indicates that the food is reaching pre-school children.

GPC proposed that the food be made from locally produced ingredients or ingredients which, as a result of agricultural development programs in Guyana, would become available soon. The proposal called for manufacture of a pre-cooked, cereal based food similar to CSM and WSE, the U.S. produced food supplements distributed through P.L. 480, Title II. The technology proposed by GPC for use in the factory was low cost extrusion cooking (LEC), an appropriate intermediate scale technology developed under AID sponsorship which has been demonstrated to be effective through operations in Sri Lanka, Tanzania, Costa Rica and Bolivia.

GPC proposed that the food be distributed nationally through retail outlets and that it be subsidized by GCG to the extent needed to assure that it would be within the purchasing power of essentially every family in Guyana. To achieve this it was proposed that the subsidy cover the cost of all raw materials and that the retail price be set to recover the costs of production and distribution. It was further proposed that a part of the food be distributed free of charge through MCH clinics so that those with insufficient income to pay even the low retail price for the product would have access to it.

The target group was defined as infants and pre-school children 4 months to 2 years of age throughout the entire country. The proposal called for directing the food primarily to this group as a supplement to breast feeding and family foods (not as a replacement for those important foods). No child was to be excluded from access to the weaning food due to income or any other factor. Breast feeding is to be encouraged for infants 0-4 months and as a continuing practice beyond 4 months but with supplementation. Pre-school children 2-5 years of age are also expected to consume the weaning food. However, use is expected to drop rapidly with age as the children switch primarily to ordinary family foods.

An informational campaign was proposed to stress that the product was especially made for infants and young children (to minimize general family use) and if used properly would help children grow strong and healthy. The campaign would contain elements of health and nutrition education supportive of national policies in those sectors as well as proper use of the food to promote food nutritional health. It would also stress use of boiled water in home preparation to minimize gastroenteric disease.

GPC acknowledged that it could not predict reliably how many children would be reached by the project because use of the food for the most part hinged on the free choice of consumers. However, it estimated that 40-50 percent of the target group would consume the product in beneficial amounts. It was therefore proposed that the project should be undertaken as a pilot project to evaluate the effectiveness of the approach to reach the target group. GPC suggested that if the approach proved to be effective, it should

be more fully implemented during a second three-year project (Phase II) and ultimately converted to an ongoing, totally GOG-funded intervention after six years (Phase III).

2. A.I.D. Health/Nutrition Assessment of GPC Proposal:

In February 1978 members of an AID Health and Nutrition Sector Assessment Team reviewed the GPC proposal in the context of the needs of Guyana and Guyana's overall health and nutrition program. The team concluded that the project was soundly conceived and recommended that:

"USAID should support this project as its first initiative in the nutrition sector for the following reasons:

- (a) Weaning food manufacture is cited in a variety of GOG planning documents as a priority project (See Section G of this chapter).
- (b) This project was identified as a high priority of the GOG by individuals interviewed by the health/nutrition team. The individuals included officials in the NSRC, Ministry of Agriculture, Ministry of Economic Development and Cooperatives (including the Permanent Secretary), and Ministry of Health (including the Permanent Secretary).
- (c) The project represents a technically sound and appropriate response to the solution of the protein-energy malnutrition problem in the under-age population in Guyana.
- (d) The project is multi-sectoral in its design in that it cuts across the health, agriculture, education, finance, and food processing/marketing sectors.
- (e) In addition to the immediate objectives of the project, the following possible outcomes (multiplier effects of the project) make the project worthy of support:
 - 1) the project could serve as a catalyst in coordinating all relevant bodies in Guyana to implement nutrition action programs;
 - 2) the project could serve as a model to encourage import substitution;
 - 3) the project could stimulate the development of a major food processing capability in Guyana;

and 4) being highly visible, the project could stimulate policy decision-makers as to the importance of adequate nutrition in national development.

- (f) The project will serve to sustain momentum in Guyana with regard to nutrition while the various administrative, financial, and organizational uncertainties surrounding the food and nutrition policy are resolved, the organizational capability of the MOH is improved, and various investigative studies are undertaken to strengthen the data base.
- (g) The project will test the capability of GOG agencies in implementing national nutrition action programs.
- (h) The nature and scope of this project is highly appropriate for Guyana, given the current shortage of technicians and middle level workers in Guyana's health/nutrition sector, the relatively weak data base for planning and programming, the lack of an adequate administrative and technical infrastructure for implementation of national multi-sectoral food and nutrition projects, and the relative scarcity of counterpart funds. GPC is administratively and technically competent and eager to implement this project, and the GOG has come up with the necessary counterpart funds, which indicates the priority assigned to this project by the GOG".

More recently, in August 1978, a four-person team of nutrition experts headed by Dr. Michael Latham, Professor of Nutrition of Cornell University, and including Dr. James Cook, Hematologist of Kansas University, visited Guyana and confirmed the findings relating to the incidence of malnutrition in pre-school children and recommended the local production of a nutritious weaning food as a needed intervention.

3. Food Commodity Input:

a) Title II P.L. 480 Proposal:

As was stated above, the proposal submitted by the GPC to AID for the product development phase of the Project was for manufacture of a pre-cooked, cereal based food, and the technology was to be low-cost extrusion cooking (LEC), an appropriate intermediate scale technology developed under AID sponsorship, and effectively utilized elsewhere.

Because local production of the essential basic food ingredients is not sufficient at this time to undertake the project, the Government requested a grant of Title II P.L. 480 food commodities and project support pursuant to Section 206 of P.L. 480 to enable it to do so.

The formulation of the weaning food product is in large part based on ingredients that can be produced in Guyana and this linkage is essential if the project is to sustain itself over the long term. Rice and sugar, two of the planned ingredients, are already produced in exportable quantities. The two major ingredients, however, are corn and soybean, but because the production of both of these commodities is in a stage of infancy, it will be some time before production will be adequate to sustain project needs. The two commodities are, however, a part of a CARICOM project launched in late 1976 in Guyana as the CARICOM Corn and Soybean Company. The first crop of corn and blackeye peas was harvested in May 1977 on 550 acres; in 1978, production is planned to be increased to 240 acres of soybeans and 1,400 acres of corn. Based on current average yields, the additional acreages from this project alone could increase soybean production by more than the 620 MT required for the weaning food by 1983. As for corn, the CARICOM project would be producing more than the 340 MT required by this project by 1981. In addition to the CARICOM project, the GCG is placing a heavy emphasis on self-sufficiency in agricultural production. A substantial investment is planned in programs designed to increase the production of grain, legumes, including soybeans. There are other programs aimed at corn production. Thus, in light of the Government's strong commitment to increase agricultural production, there is every expectation that there will be an adequate supply of corn and soybean for use by Phase III.

Nonetheless, in view of the relative stage of infancy of corn and soybean production in Guyana at this time and the increased demands expected for these products, both for local consumption and export to other CARICOM markets participating in the project, it will be necessary to import the necessary quantities of corn meal and soy flour needed at least during the three years of this pilot project, and very likely through Phase II, years 4 to 6 after project initiation. Given the increased commodity requirements projected as the weaning food product becomes better known and accepted by consumers, and the unlikely availability of adequate supplies of corn and soybean, it is essential that the availability of these commodities be assured through a Title II program during the pilot phases of the project. Efforts, however, will be made to introduce locally produced corn and soy when these commodities become available in sufficient quantities.

The proposed formulation also contains non-fat milk powder. This has been incorporated into the product partly because of its high quality protein content and partly because it produces a desirable mouth feel. Almost all milk is now imported; the agricultural program for expansion of milk production has just begun and has a projection for self-sufficiency by 1986. This would mean that the weaning food would still be dependent on imported non-fat milk powder in Phase III of the Project. It is hoped that agencies such as EEC, WFP, UNICEF, Canadian Government, and the New Zealand Government would, at that time, still be in a position to make donations of this commodity. Failing this kind of assistance, it will be necessary to purchase the commodity on the international market or to change the formulation of the weaning food. The latter alternative is not recommended because of possible serious consequences to the market acceptability of the product at that time.

The commodities tentatively projected for product formulation of the weaning food during Phase I are:

		(In 1,000 KG)		
		FY 1978	FY 1979	FY 1970
1.	Corn Meal	74	172	221
2.	Soy Flour	48	111	143
3.	Milk Powder	36	54	137
4.	Vegetable Oil	17	39	50

Metric Ton Total by Year:	175	406	521
Estimated U.S. Dollar Value:	\$57,722	\$132,079	\$167,110
U.S. Dollars - Freight:	20,000	46,000	65,000

b) Sale of Title II Commodity:

Distribution of the weaning food is proposed on a national scale through retail outlets, both Government and privately owned, and about 80 to 85 percent of the product is to be sold to the public, although subsidized to the extent needed to make the product accessible to low-income families. The subsidy is to cover the cost of all raw materials, and the retail price is designed to recover the production and distribution cost. Approximately 15 percent to 20 percent of the weaning food is to be distributed through MCH clinics, free of charge, to ensure that those having need would have access to the product free of charge.

Although Title II, P.L. 480 food commodities may not as a general rule be sold, Section 206 of P.L. 480 permits the sale of such foods in the case of pilot programs to help LDC's develop indigenous weaning foods. This Project therefore qualifies for such assistance.

c) A request for Title II food commodities, is being made through appropriate channels simultaneously with the development of this grant project which is proposed for financing from development assistance funds since the availability of food commodities under Title II of P.L. 480 is essential to the project.

(4) Weaning Food Development - Outline of the Three Phases:

PHASE I: Having a duration of three years is a pilot project in which a weaning food factory is built, the food is manufactured and distributed through both retail outlets and MCH centres with accompanying advertising and promotion, and the effectiveness of reaching the target population, the operational costs and other relevant factors are assessed. AID support to Phase I will include P.L. 480 Title II commodities as well as packaging materials which are unavailable in Guyana but which are under development and expected to become available during Phase II. At the end of Phase I, the program will be evaluated and extended or modified or terminated as appropriate.

During Phase I, 84% of the raw food materials would be provided by P.L. 480 Title II while the GOG would provide 16% from local products.

PHASE II: Also having a duration of three years a follow on to Phase I is planned in which distribution is expected to expand to reach essentially the full market potential. AID financing and grants of P.L. 480 Title II commodities will be phased out during Phase II and the program will be sustained thereafter totally with local ingredients, local packaging and local financing. The experiencing of the Phase II project would be evaluated and used to modify and improve the program as appropriate. During this phase, the P.L. 480 Commodities will be phased out as follows:

	FY 81	FY 82	FY 83
P.L. 480 Title II	80%	46%	15%
GOG	20%	54%	85%

PHASE III: The on-going GOG weaning food program, represents continuing extension of Phase II in which weaning food is made available to Guyanese pre-school children as an established, GOG-funded nutrition intervention. During Phase III, of course, the GOG will provide 100% of all inputs.

The in-depth evaluation scheduled for the third year of this project will determine whether the pilot Phase I was successful. If found to be successful, the Mission would propose proceeding to Phase II. Accordingly, the Mission will program funding in the FY 81 Budget for Phase II.

One of the essential inputs into the project will be P.L. 480 Title II commodities. The commodities consisting of Cornmeal, Soyflour, Milk Powder and Vegetable Oil are necessary in order to produce a weaning food which has acceptable properties of sight, taste, shelf life and nutritional value. Corn and Soybeans are produced in Guyana, but in small quantities at present. The GOG has a program underway to increase Corn and Soybean production and the Title II commodities will be phased out as rapidly as possible. (For additional details, see P.L. 480 Title II Request attached in Annex 8).



GPC plans to retail the Weaning Food at G\$0.80 per pound (US\$0.314 per pound). Current production and distribution cost estimates indicate that an excess of revenue over costs will be generated during the early years of the project but will be subsumed by inflation by the end of the project. The excess revenue will be deposited in a special account at GPC and will be used for a nutrition education program under the direction of the National Nutrition Committee.

C. Goal of Project

1. Sector Goal:

The goal of the nutrition sector is to improve the nutritional status of Guyana's pre-school children and pregnant and lactating mothers through government-sponsored programs. In view of the limited resources available to the GOG and the heavy demands of other sectors, particularly agriculture, the program strategy necessarily links a small number of highly targeted, reasonably scaled intervention projects to the sector goal. Until this time the ongoing MCH clinic project through which mothers and pre-school children receive health services, nutrition education, and food supplements has been the primary element in the GOG program. The GOG has now decided to include a weaning food development project as a second major element and thereby expand the availability of food supplements to the entire population of pre-school children. The project will also make available food for distribution in MCH centres to complement imported donated foods. A third element in the program is an ongoing nutrition surveillance project which will monitor progress in the program and provide inputs for programmatic decisions. This element has not yet been developed. Collectively these three elements are intended to address the major nutrition problem of Guyana, undernutrition among pre-school children.

2. Measure of Goal Achievement:

The sector goal will be achieved when malnutrition among pre-school children is reduced significantly. It is not expected that individual elements in the program will have a major effect on the problem because of the complex interactions between the factors causing malnutrition. Collectively, however, the projects should lead to a major reduction in the number of malnourished children. Because of the magnitude of the problem and the state-of-the-nutrition-art, it is not possible to

quantify the expectations of the program. However, a reduction of the number of undernourished children by one half might be possible. The level of malnutrition among pre-school children will be determined periodically by national nutrition surveys.

3. Assumptions to Achieve Goal Targets:

Two primary assumptions underly the achievements of the sector goal. First, it is assumed that the country's economic structure will not deteriorate to the extent that further unemployment, reduced purchasing power, and other pressures will accentuate the problem of malnutrition. Second, it is assumed that the GOG will support the sector program by providing long-term funding and personnel to carry forward the major program elements.

D. Purpose of Project

1. Project Purpose:

The purposes of this project are to establish the capacity for weaning food production locally based on indigenous ingredients and to test the feasibility of distributing the weaning food through retail outlets at a subsidized price in order to improve the nutrition status of children 4 months to 2 years of age. If it can be established that weaning foods can be distributed widely throughout the country and consumed by a substantial fraction of the target group as a supplement rather than a replacement for other foods, then the project in conjunction with others in the sector program should lead to improved nutritional status among the target group. Accordingly if final evaluation of the project shows the distribution program to be effective, then project activities should be continued as an ongoing nutrition intervention. On the other hand, if evaluation indicates the program is not effective, measures should be taken to strengthen the project before full implementation or, if appropriate, discontinue it. Thus the pilot project strategy necessarily requires the use of a factory to produce weaning food, a distribution system to deliver the food to the target group, and an evaluation to assess the effectiveness of the total process.

2. End of Project Status:

Several conditions will indicate that the project purpose will have been achieved upon completion of the project. These include:

1. Weaning food factory will have been designed, built, and operated satisfactorily as evidenced by a technical evaluation by a team of experts. The criteria of satisfactory performance will cover appropriateness of the equipment and the factory as a whole for Guyana, the production as well as the mechanical performance of the factory, the quality of the product, and such other factors as are deemed important by the evaluation team.
2. The weaning food will be distributed widely throughout Guyana among all segments of the population via retail outlets and MCH clinics. The extent of distribution will be measured both by consumer surveys and by records of sales volume. Although it is not possible to forecast the coverage achievable by the project it is expected that 40-50% or more of the 150,000 pre-school population might be reached with the food, 60% or more of these within the three-year life of the pilot project. It is expected that approximately 9,000 children will be reached through MCH clinics.
3. If the project purpose is achieved and the food reaches a significant proportion of the target group, then the GOG would be expected to implement the project as an ongoing intervention. Thus if the pilot project is successful, a statement of intention to continue the program can be expected to be made by the GOG as an indication of purpose achievement.

3. Assumptions for Achieving Purpose:

The primary assumption for purpose achievement is that a weaning food product of high enough acceptability can be developed so that mothers will be prepared to purchase

it at its subsidized price. The validity of this assumption can only be determined through the project itself since it is made of many complex factors such as price elasticity of demand, product acceptability, and marketing effectiveness.

E. Outputs of Project

1. Project Outputs:

The major project outputs include:

- The weaning food factory which is necessary to convert raw materials into a finished product and to package the product for distribution on a scheduled basis.
- Production of weaning food for distribution to the target group.
- A countrywide distribution system through which the food can be moved from the factory to retail stores and MCH clinics there to be sold/given to families in the target group.
- An informational campaign to persuade families to use the product as a supplement to breast milk for infants and to enrich the diet of pre-school children.
- A set of surveys to: (a) establish the acceptability of the product through in-home placement and determine base line data on weaning food practices in Guyana; (b) determine through preliminary "mini-market" testing if either the product or market plan has major faults that require attention; (c) a market penetration/consumption study after the product has been marketed for 6 months to assess the effectiveness of the project in reaching the target group and guide decisions as to changes/improvements in project implementation; and (d) a second market study 6 months before the end of the pilot project to form a basis for final evaluation of the effectiveness of the project and for reaching decision as to continuation of the project.

In order to achieve these outputs, inputs of factory equipment and building, raw materials, vehicles for distribution, and funds for subsidies, evaluation, and technical assistance are required.

2. Magnitude of Outputs:

The weaning food factory will be designed for a nominal capacity of 1,000 tons per year for one shift operation. It will be located in the Greater Georgetown area, at the Central Food Unit building in the Industrial Site, Ruimveldt. The specific product formulation and manufacturing procedure will be developed by GPC in collaboration with and with technical assistance from the U.S. Department of Agriculture under an AID funded RSSA as a pre-project activity. The processing system will be designed to: (1) precook a corn/rice/vegetable mixture using a Brady extrusion cooker; (2) grind the the cooked product and blend it with milk powder, soybean flour, sugar, vitamins and minerals; and (3) package the blended food in $\frac{1}{2}$ lb. units in polythene bags.

Weaning food production will be scheduled to satisfy the demands of the retail market and the requirements of MCH clinic distribution. It is estimated that full market development will require 700 tons per year for retail distribution and 150 tons for MCH clinics or 850 tons total. Because the plant is not expected to start operation until the second half of the first project year, and because the retail market is likely to require several years to achieve its full potential, requirements for weaning food production are estimated to be:

<u>Project Year</u>	<u>Production (M Tons)</u>
1	430
2	570
3	710

The plant is expected to reach 850 tons of production by the fifth year of operation. Actual production will be verified by production records.

The retail distribution system for the product will consist of truck/van deliveries by GPC to essentially all of the wholesale and retail outlets presently supplied with GPC's regular line of pharmaceuticals and toiletry items. This coverage reaches some 4,000 retail outlets or about 90% of the packaged food stores in Guyana. Additional distribution to relatively inaccessible areas of the interior will be achieved through coordination with the Ministry of Economic Development and Cooperatives.

Retail pricing will be established to recover costs of production and distribution exclusive of raw material costs; costs of raw materials will be borne by the project as a subsidy in order to make the product accessible to low income families. The price is expected at the outset to be around G\$0.80 which is two to three times the retail price of rice but one-half or less the price of traditional weaning foods (plantain flour mixture) and one-tenth the price of imported weaning food.

Distribution to MCH clinics will be scheduled by the MOH and deliveries will be made by GPC. Approximately 150 MCH clinics will be served. The project will bear the full costs of manufacture and distribution of weaning food to MCH clinics. Sales and distribution records will be used to verify this output.

The informational campaign will be designed to persuade mothers to serve the product regularly to weaning age children as a supplement to breast milk and as an addition to appropriate family foods afterward. Preparation of cooked porridge for spoon feeding will be emphasized. The campaign will stress that continued use of the product will result in healthier children. Mass media, including radio, newspaper and cinema will be utilized in the informational campaign. In addition special promotions will be directed to opinion leaders, the medical community, MCH clinic personnel and others who can influence use of the product. Also, nutrition and health education messages will be incorporated in the campaign including encouragement of breast feeding, early introduction of appropriate family foods, and suggestions promoting hygienic food handling, particularly stressing use of boiled water in preparing porridge. The levels of use of various media will be established by GPC marketing personnel and verified by advertising agency records.

The four consumer surveys will be designed by GPC and conducted by local interviewers employed by GPC. Reports on each survey will be issued.

Assumptions for Providing Outputs. It is assumed that project inputs will be made by AID and the GOG on a timely base and that GPC will assign qualified personnel to implement the project.

It is also assumed that consumer demand will warrant the level of production projected for the first three years of the project.

F. Inputs of Project

Project Inputs:

A. AID

1. Funds for imported factory equipment, vehicles, packaging materials, and vitamin/mineral premixes. (See Annex 7 for Equipment List).
2. Funds for four market research studies (in-home placement study; "mini-market" test; first market evaluation and final market evaluation).
3. Funds for technical assistance related to factory start-up and operation, design and interpretation of market research studies, and information/promotion campaign design.
4. P.L. 480, Title II. Commodities for use during the pilot phase of the project as raw materials to produce the weaning food are corn meal, soy flour, milk powder, and soybean oil. The commodities needed for the three year life of the pilot project are to be the subject of a separate Government of Guyana/Agency for International Development Agreement. (See Annex 8 for the Title II Proposal).

B. GOG

1. Factory buildings and funds for equipment installation.
2. Funds for operation of the facility, personnel, and distribution of weaning food to MCH clinics.
3. Locally produced commodities, sugar and rice for use as raw materials, to produce the weaning food.

FINANCING INPUTS (US\$ 000)

	<u>FY 78</u>	<u>FY 79</u>	<u>FY 80</u>	<u>TOTAL</u>
<u>AID</u>				
Equipment and Materials	248.5	62	84	394.5
Market Studies	11.5	23	10	44.5
Commodities	10.0	20	16	46.0
Technical Assistance	5.0	10	-	15.0
	<u>275.0</u>	<u>115</u>	<u>110</u>	<u>500.0</u>
<u>GOG</u>				
Facilities and Personnel	265	70	70	405
Commodities	15	34	48	97
	<u>280</u>	<u>104</u>	<u>118</u>	<u>502</u>
Project Total:	<u>555</u>	<u>219</u>	<u>228</u>	<u>1,002.0</u>

III. PROJECT SPECIFIC ANALYSES

A. Economic Analysis

The methodology used for the economic section of this Project Paper is the traditional benefit cost and internal economic rate of return analysis. The cost and benefit streams are discounted to present value at both 10 and 15 percent.^{1/}

1. Benefits of the Project:

The primary benefit of this project will be the improve nutritional status of the population, particularly infants and pre-school children, 4 months to 2 years of age. There are several ways to measure the nutritional status of groups of people. However, even if an estimate of this type existed, it would be difficult to value this in dollar terms. A dollar value is necessary in order to make the benefits comparable to project costs.

Another way to estimate the value of nutrition would be to find out what people are willing to pay for a nutritious food. Since the weaning food to be produced under this Project is not yet on the market, it is not possible to find out how much people are willing to pay for it. However, there are several weaning foods being currently imported into Guyana which are similar, at least nutritionally, to the weaning food which will be produced by the Project. The imported products are retailing for an average of \$1.817 per pound.

This is one indication of what people are willing to pay. The next question is how much did they buy at that price. Import data for Guyana lumps "Prepared Cereals" as one line item and reports only the value, not the quantity. This likely includes some products other than weaning foods; nevertheless, it does give some indication of the magnitude.

^{1/} IBRD uses 10 percent as the opportunity cost of capital for Guyana and this rate was also used in the Blackbush and Rice Modernization PPs.

PREPARED CEREALS IMPORTS

(U.S. Dollars)

1973	-	1,020,830	1976	-	3,061,737
1974	-	2,092,447	1977	-	2,123,398
1975	-	2,475,256			

Another way of estimating the benefits would be to calculate the retail price which would cover all costs of production and distribution of the product. That price would be about US\$0.60 per pound. The difference between this price and that of the imported products is mostly import tariffs, more expensive packaging (all of the imports are in tin cans) and transportation. For comparison, the retail price of weaning foods in the U.S. is about US\$.90 per pound.

For lack of a better alternative, the benefits were estimated using 60 cents per pound as the value. Also, the analysis assumes that the benefits are delayed one year behind production. It is assumed that the equipment will have a 10-year life and that the vehicles will be replaced after five years.

2. Cost of the Project:

The costs of the project were estimated in the usual manner. The production costs include the current market value of the P.L. 480 foods. The production costs also take into account maintenance of the equipment and vehicles.

3. Benefit/Cost Ratio:

Using the IBRD suggested discount rate of 10 percent, the benefit/cost ratio is 1.11. However, when a 15 percent discount rate is applied, the benefit/cost ratio is 1.05. The internal economic rate of return is 19 percent. (See Table III.1)

Since the entire economic analysis hinges on the assumed price of the product, a sensitivity analysis of that price is in order. Table III.2 presents the results of such an analysis. Using the 15 percent discount rate, the benefit costs ratio drops to .96 with a price of 55 cents per pound and .87 with a price of 50 cents per pound. Using a 10 percent

TABLE III.1 - WEANING FOOD PROJECT - BENEFIT COST ANALYSIS

(All amounts in U.S. dollars)

PROJECT COSTS				BENEFITS	
Year	Capital Equipment and Buildings	Production Including Market Value of PL 480 Commodities	Other Costs, T.A. and Market Research	Total Costs	Assumes US\$0.60 per pound retail price as Benefit value of the Food
1	422,355	415,774	40,000	878,129	-
2	-	523,736	10,000	533,736	568,632
3	-	641,578	5,000	646,578	753,768
4	-	694,838	-	694,838	938,904
5	-	749,548	-	749,548	1,031,472
6	10,000*	789,548	-	789,548	1,124,040
7	-	749,548	-	749,548	1,124,040
8	-	749,548	-	749,548	1,124,040
9	-	749,548	-	749,548	1,124,040
10	-	749,548	-	749,548	1,124,040
Totals:	462,355	6,773,214	55,000	7,290,569	8,912,976

Present Value discounted at 10% $\frac{\text{Benefits } \$4,829,591}{\text{Costs } \$4,353,743} = 1.11 \text{ B/C ratio}$

Present Value discounted at 15% $\frac{\text{Benefits } \$3,635,494}{\text{Costs } \$3,469,218} = 1.05 \text{ B/C ratio}$

Internal Economic Rate of Return = 19 percent

* Replacement of 2 vehicles after 5 years.

TABLE III.2 - SENSITIVITY ANALYSIS OF THE ASSURED WEANING FOOD PRICE
(U.S. Dollars)

Year	B E N E F I T S	
	Assumes \$0.55 per pound price	Assumes \$0.50 per pound price
1		
2	521,246	473,860
3	690,994	628,140
4	860,712	782,420
5	945,571	859,560
6	1,030,430	936,700
7	1,030,430	936,700
8	1,030,430	936,700
9	1,030,430	936,700
10	1,030,430	936,700
Total:	8,170,673	7,427,480
Present Value at 15%	3,332,707	3,029,578
B/C ratio	.96	.87
Present Value at 10%	4,427,357	4,024,659
B/C ratio	1.00	.90

discount rate, the benefit ratio is 1.0 at 55 cents and .90 at 50 cents. The conclusion to be drawn from this analysis is that given the project costs, 55 cents is the minimum value which could be assigned to the product in order to show an acceptable economic rate of return.

There are also other benefits which are even more difficult to quantify. These include the foreign exchange savings, the employment effect of the production facility and the increased demand for locally grown products. Based on the analysis, the project is economically feasible.

B. Social Analysis

Social/Cultural Effect:

The project will have a positive social consequence in that achievement of the objective of nutrition improvement among pre-school children and will favorably redound in various areas of the social sector. These include improved general health through good nutrition; improved learning ability of the children once they commence the educative process and, ultimately, reduced social welfare costs.

The production of weaning foods in Guyana will have no purely cultural effects, either positive or negative. Imported weaning foods have been available in the country for numerous years, though availability has been restricted due to economic considerations. The cost of these imported weaning foods was such that they were outside the financial reach of the majority of the population.

The project will have no disruptive effects upon the normal, traditional practices relating to nutritional intake. The information program relating to the promotion of weaning food will stress that it should be considered a supplement to breast feeding, not a substitute.

Target Population/Spread Effect Participation of the Poor:

The primary target group are infants and pre-school children four months to two years of age throughout Guyana. Pre-school children 2-5 years of age can be considered a secondary target group as they are also expected to consume the weaning food. By the nature and objective of the Project, it will have no spread effect (i.e., diffusion to other groups) since the

target group, by design, is restricted. While having no direct spread effect, per se, the project has the potential to have a multiplier effect, in a policy sense, which could subsequently stimulate other nutrition intervention activities. The project represents the first major program to improve nutrition in a number of years, and as such could serve as a catalyst in coordinating all relevant bodies to implement nutrition programs.

The participation of the poorest families in the program, as beneficiaries, is assured as the marketed weaning food will be priced, through partial subsidization, to be within the financial means of the majority of those found in the poorest strata of society. Those families, within this strata, who for whatever reason cannot purchase the weaning food at the low selling price can still obtain it through MCH clinics in the country. Fifteen to twenty percent of production output will be provided to the clinics for free distribution to the poorest of the poor.

Effect on Women:

No major effects on women, in a physical or sociological sense, can be discerned as a result of the project; this being due to the nature of the project and its purposely restricted target group. Some, however, might ascribe a psychological benefit to mothers, if the premise of a maternal instinct is valid. This benefit would in the terms of the gratification mothers would derive knowing that the weaning food is available to supplement their own efforts in assuring their own young child receives proper nutrition.

C. Technical Feasibility

The weaning foods presently used in Guyana are generally either (1) locally produced plantain flour, mixed with cereal flours including rice, wheat and corn flours, or (2) imported pre-cooked cereal-based foods such as CERELAC and NESTUM.

Locally made weaning foods are generally distributed in 3-4 oz. thin gauge polyethylene bags, and are prepared by mixing with water and cooking as a porridge. The porridge is served to infants and pre-school children as a diluted gruel by bottle or as a thicker porridge by spoon. In either case, these products lack nutritional value in that they absorb a great deal of water due

to the hydration of the starch (10-15 parts water per one part flour), have relatively low protein levels since they consist totally of starchy plantain and cereal flour, and have only limited amounts of essential vitamins and minerals.

The imported weaning foods have excellent nutritional value with good protein content and supplementary vitamins and minerals. They are packed in tins and therefore are afforded excellent protection against mechanical damage and spoilage by insects and rodents. They are pre-cooked thereby providing convenience and savings in fuel and also have an improved flavor/textural quality that is associated with pre-cooking. However, the price of imported weaning foods is extremely high (G\$5-6 per pound) compared with locally produced weaning foods (G\$1.60 per pound) and none but well-to-do families can afford to use them in sufficient quantity to yield nutritional benefits. Also, importation requires expenditure of scarce foreign exchange and is therefore in conflict with the GOG policy to limit importation to the fullest extent because of its poor balance of payments situation.

The preferred solution to these problems associated with locally available plantain flours and imported weaning foods is to manufacture locally a low-cost, high nutrition weaning food using to the extent possible indigenous ingredients. The food should have high calorie density as served to children, reasonable levels of high quality protein (15-20%), and supplementary vitamins and minerals. It should be in the form of flour to fit local practices of making porridges but pre-cooked at least to the extent needed to reduce cooking time and promote palatability. (A short cooking time is desirable in order to destroy pathogens in the added liquid). It should be priced low enough to be within the purchasing power of low income families. Therefore the ingredients and method of manufacture should be as inexpensive as possible. It would be desirable to use tins for packaging but this would lead to excessive expense and require additional inputs; a high quality polyethylene bag represents a reasonable compromise.

The choice of locally produced low-cost ingredients is limited considerably at this time. Rice is readily available and inexpensive. Wheat is also inexpensive but is totally imported and has no prospect for local production. Corn is produced in a very limited amount in Guyana (3,000 - 8,000 tons per year during 1972-7) and imports are required to meet present demand. However,

the GOG is supporting the expansion of corn production and expects to be self-sufficient within the next few years. Organized production of plantain is not carried on and therefore the price is high (G\$1.60 per pound) and the supply is limited and unreliable. Legumes are also in short supply and imported to meet local demand. However, GOG programs are being undertaken to expand production of soybeans and blackeye peas and both are expected to be available in adequate supply within five years. Milk supplies in Guyana are limited and imports are expected to be required on a continuing basis. Sugar is available in adequate supply.

Considering these various alternatives, it has been concluded that in the long term locally produced rice, corn, soybeans and soybean oil and sugar can provide the basic ingredients for the weaning food, and that imported milk and vitamin/mineral premixes are justified in order to assure proper nutritional qualities.

Two standard methods of processing are available by which these ingredients can be converted to a partially or fully pre-cooked weaning food product. One method - the one generally used to produce cereal-based commercial weaning foods - involves preparation of a slurry of the ingredients and cooking/drying the slurry on steam-heated metal rollers. The second method - the one used to produce corn-soy milk (CSM) in the U.S., Fortesan in Chile, Thripasha in Sri Lanka, and several other pre-cooked foods - is extrusion cooking. In this method of processing the raw cereal grain flours are passed through an extrusion-cooking machine in which the flour is heated, sometimes in the presence of steam and water, and the cooked cereal is extruded through a die, dried if necessary, cooled, and ground to a flour.

Of these two methods of pre-cooking, extrusion cooking requires less capital costs and is also less expensive per unit of production for total processing costs.

After considering the various options, GPC selected extrusion cooking as the preferred method of manufacture and chose extrusion equipment and ancillary machines of appropriate size to fill the anticipated demand of 850 tons per year. The system selected by GPC has the capability of producing and packaging 1,000 tons per year operating shift and could, if increased demand required, achieve double this output.

D. Administrative Analysis

GPC was originally a British owned firm, founded in 1930, which was nationalized in 1976. GPC currently produces 80 products including proprietary drugs, generic drugs, toiletries, laundry soap, etc. employs 300 people and had sales of G\$5.3 million in 1977. GPC is one of 37 Public Corporations under the umbrella of the Guyana State Corporation (GUYSTAC). As a Public Corporation, in addition to the fundamental objectives of maximizing long term surpluses and of achieving a satisfactory growth rate, GPC has certain material and social objectives as well, the primary one being that of meeting the country's health needs.

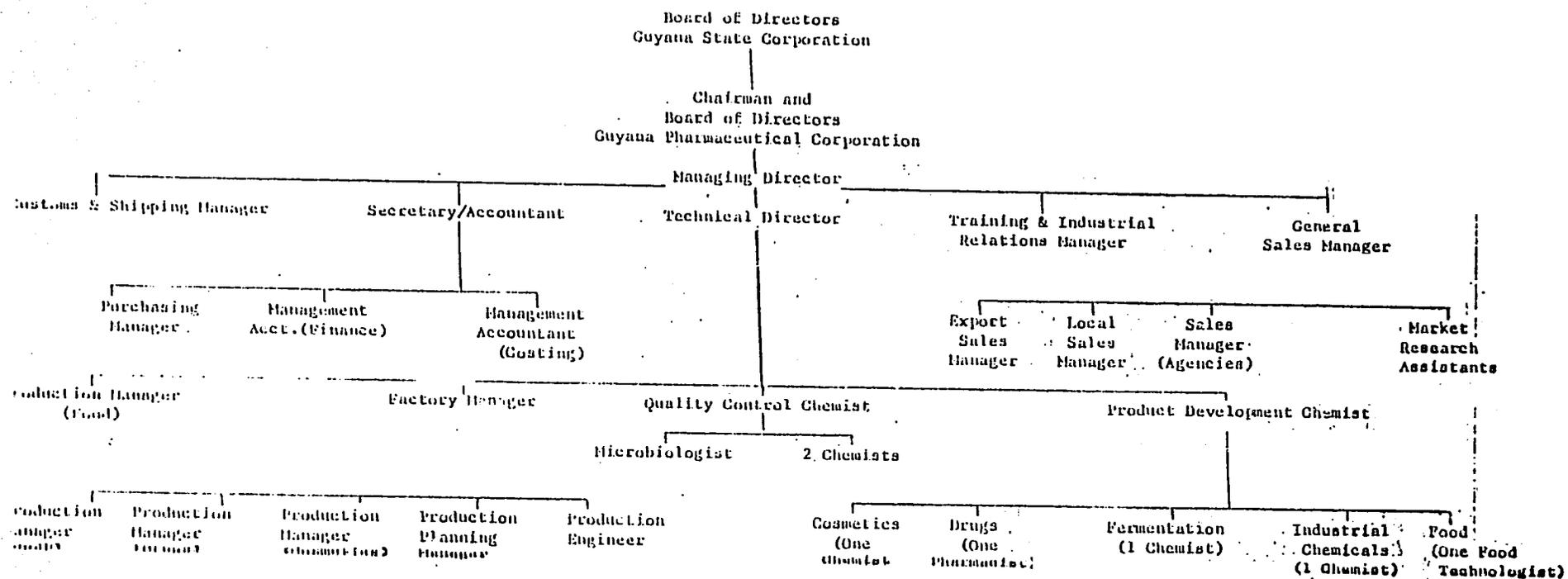
The Corporation even before nationalization had decided to move into the area of food production. GPC created a Food and Nutrition Department (see the organization chart) and has, in addition, one graduate Food Microbiologist and one technical assistant with a diploma in Food Technology. The operations of this department fall under the supervision of the Technical Director of GPC, who has a Doctorate in Food and Nutrition.

Although the staff are well trained they do lack practical experience. The Technical Director, however, has had three years experience in managing GPC's Pharmaceutical operations. The head of the department, who will be the Weaning Food Factory Manager, will be visiting the CARE financed Weaning food plant in Costa Rica in order to familiarize himself with the processing operations. In addition, considerable technical assistance has been provided by the Department of Agriculture and Colorado State University in plant design, development of equipment lists, factory operation, market promotion, market research, product formulation and market testing.

The Weaning Food Project is first priority for the Food and Nutrition Department. The Corporation purchased an extrusion cooker which is being used to produce trial samples of weaning foods, as well as other commercial products e.g. an instant pea soup, a breakfast cereal and cornmeal. The project will be financing additional technical assistance in the area of Plant Engineering and operations, product formulation, as well as, marketing.

The management at GFC is very forward looking, energetic and committed to this project as well as their other plans for future expansion. The project development team is confident that GFC has the required commitment, energy and administrative capability to successfully carry out this project.

ORGANIZATION STRUCTURE OF GPC (1979)



IV. FINANCIAL PLAN

The following tables present the project financial plan. The detailed bases for the cost estimates are presented in Annex 7

Table IV. 2 presents the costing of the project outputs by inputs.

Table IV.1

WEANING FOOD DEVELOPMENT

SUMMARY COST ESTIMATE AND FINANCIAL PLAN

(US\$ Thousands)

SOURCE	AID		GOG		TOTAL
	FX	LC	FX	LC	
USE					
1. Equipment and Materials	340.8	19.9	--	--	360.7
2. Marketing	--	44.5	--	--	44.5
3. Technical Assistance	15.0	--	--	--	15.0
4. Commodities	46.0	--	--	88.2	134.2
5. Facilities and Personnel	--	--	--	277.3	277.3
Contingencies	31.8	2.0	--	136.5	170.3
Totals:	433.6	66.4	--	502.0	1,002.0

TABLE IV.2

COSTING OF PROJECT OUTPUTS/INPUTS

(US\$ Thousands)

WEANING FOOD DEVELOPMENT

<u>PROJECT INPUTS</u>	<u>PROJECT OUTPUTS</u>				Total
	Establishment of Plant	Weaning Food Production	Distribution System	Marketing of Product	
<u>AID</u>					
1. Equipment & Materials	178.5	186.0	30.0	-	394.5
2. Marketing	-	-	10.0	34.5	44.5
3. Commodities	-	46.0	-	-	46.0
4. Technical Assistance	5.0	5.0	-	5.0	15.0
Sub-Total AID:	<u>183.5</u>	<u>237.0</u>	<u>40.0</u>	<u>39.5</u>	<u>500.0</u>
<u>GOG</u>					
1. Facilities & Personnel	225.0	150.0	20.0	10.0	405.0
2. Commodities	-	97.0	-	-	97.0
Sub-Total GOG:	<u>225.0</u>	<u>247.0</u>	<u>20.0</u>	<u>10.0</u>	<u>502.0</u>
PROJECT TOTAL:	<u>408.5</u>	<u>484.0</u>	<u>60.0</u>	<u>49.5</u>	<u>1,002.0</u>

TABLE IV.3

PROJECTION OF EXPENDITURE BY FISCAL YEARS
(US\$ Thousands)

	<u>FY 78</u>	<u>F 79</u>	<u>FY 80</u>	<u>TOTAL</u>
<u>AID</u>				
1. Equipment and Materials	248.5	2.0	84.0	394.5
2. Marketing	11.5	3.0	10.0	44.5
3. Commodities	10.0	0.0	16.0	46.0
4. Technical Assistance	5.0	0.0	-	15.0
Sub-Total AID:	<u>275.0</u>	<u>15.0</u>	<u>110.0</u>	<u>500.0</u>
<u>GOG</u>				
1. Facilities & Personnel	265.0	0.0	70.0	405.0
2. Commodities	15.0	4.0	48.0	97.0
Sub-Total GOG:	<u>280.0</u>	<u>14.0</u>	<u>118.0</u>	<u>502.0</u>
PROJECT TOTAL:	<u>555.0</u>	<u>29.0</u>	<u>228.0</u>	<u>1,002.0</u>

V. IMPLEMENTATION PLAN

The Guyana Pharmaceutical Corporation (GPC) will be responsible for the implementation of the Project. GPC will appoint a project manager who will oversee all aspects of project implementation.

The USAID Public Health Advisor will have primary responsibility for the health/nutrition aspects of the Project and the Rural Development Officer will have primary responsibility for the agri-business aspects of the Project, as well as assisting with implementation procedures until the weaning food factory is operational. Thereafter it is anticipated that the Public Health Advisor will have primary responsibility for monitoring project progress and assisting with continuing implementation matters. The Mission Program Officer will play a key role in coordinating the P.L. 480 Title II input to the Project as well as assisting in evaluation and implementation of the Project as necessary.

The Project will have a duration of three years. During the first nine months the factory equipment will be ordered, delivered and installed and the factory started. The delivery vehicles will also be ordered and delivered during that period. During the remaining two years and three months the factory will be operated as required to meet the demand of the retail market and MCH clinics.

Raw materials (Title II commodities, vitamin-mineral premixes, and packaging materials) will be procured in four tranches. The first tranche will be delivered by the end of the sixth project month (to be available for factory start-up beginning in the seventh project month). The remaining three tranches will be delivered at approximately nine month intervals thereafter to maintain relatively fresh supplies. The quantities in each tranche will be determined at the time of the order to account for carry over supplies and projected market demand. (Note: Due to the relatively small requirements for commodities, and the long delivery time a nine-month interval between shipments is proposed as a compromise between small shipment size

and over-aged supplies. In no case should delivery intervals exceed one year).

The "mini-market" test (distribution of the product through a few scattered retail outlets to preliminary assess consumer reaction) will be initiated one month after the Project is approved and will continue for at least five months or until full-scale marketing starts. Full scale retail marketing will start at nine months; advertizing and promotion will begin as soon as the product is available in retail outlets throughout the country. MCH distribution will commence two months after retail distribution in order to establish a high quality image before the product is distributed free.

The in-home placement test (to assess consumer acceptance and determine child feeding practices baseline data) will be undertaken during the second-third project month. Market penetration by the new product and consumption patterns will be evaluated six months after market introduction and again six months before project completion. The final market study will be used as a basis for extending the Project to Phase II and therefore must be completed in sufficient time to develop a follow-on project and avoid interruption of production and distribution.

A project timing chart is shown in Figure I.

VI. EVALUATION PLAN

Evaluations of the Project will be held annually, with the first scheduled in October 1979. The evaluations will assess, inter alia, the following:

- (a) The local availability and costs of food required, plus costs of other materials using baseline data gathered during the L.O.P. (year 3 evaluation only).
- (b) Consumption levels of the weaning food (year 3 evaluation only).
- (c) Price of the weaning food relative to production costs and to substitute foods (either ready-made or home-formulated).
- (d) Analysis of distribution/marketing of product, both retail and through MCH centers.
- (e) The capacity of Government to maintain and expand production in subsequent years given subsidy levels.
- (f) Progress and effect of nutrition education program.
- (g) Actual production of weaning foods, by year, against projected production levels.

The final evaluation, of three to be conducted, will be the most extensive and important. In addition to the normal makeup of the evaluation body, to be composed of representatives of GPC, Ministry of Health, and USAID, a representative from the AID/W Office of Nutrition and the Regional Nutrition Officer will be asked to attend. The final in-depth comprehensive evaluation is considered essential, considering the pilot nature of the project, and the expectation that USAID assistance will be requested during Phase II, i.e., years 4 - 6. The expanded evaluation group, with its enhanced expertise, is required to assess the Project's effect in improving nutrition of the target group. A sampling nutrition survey of modest size will be conducted prior to the final evaluation, financed by PD & S funds, to enable the evaluation body to make a studied judgment of the contribution of the project in improving the nutrition of pre-school children. This same survey will consider practices in the use of weaning food as a supplement (i.e., what, when, who, how).

Based on the findings of the evaluations, the Evaluation Committee will explore ways of complementing this pilot project with increased maternal nutrition in Phase II.

VII. SPECIAL CONDITIONS

Conditions Precedent to any Disbursement

Prior to any disbursements or issuance by AID of documentation for equipment and materials pursuant to which disbursement will be made, the Government of Guyana will, except as the parties may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D. a detailed list of equipment and materials needed for the Project together with cost estimates and needed delivery schedules.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 78 to FY 80
Total U. S. Funding 500,000
Date Prepared: September 22, 1975

Project Title: Weaning Food Development

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS																																				
<p>Program or Sector Goal: The broader objective to which this project contributes:</p> <p>To improve the general health of Guyana's pre-school children by providing nutritious weaning foods.</p>	<p>Measures of Goal Achievement:</p> <p>Improved nutrition among pre-school children.</p>	<p>Sample nutritional survey among Weaning Food users.</p>	<p>Assumptions for achieving goal targets:</p> <p>Partial subsidy of Weaning Food is maintained to make product affordable to all of target population.</p>																																				
<p>Project Purpose:</p> <p>To establish the capacity and test the feasibility of production and distribution within Guyana of nutritious weaning food made from indigenous commodities.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status.</p> <p>Weaning food factory is operating in satisfactory manner.</p> <p>Weaning food is being distributed in an efficient manner.</p> <p>Weaning food accepted by consumers and reaching target group.</p>	<p>Technical evaluation by team of outside experts.</p> <p>Sales volume and number of retail outlets.</p> <p>Market surveys.</p>	<p>Assumptions for achieving purpose:</p> <ol style="list-style-type: none"> 1. Acceptance of formulated product by potential users. 2. Price of weaning food will remain at level affordable by parents of target population. 3. Production of local foods used in formalization is as planned. 4. Subsidy support is provided. 																																				
<p>Outputs:</p> <ol style="list-style-type: none"> 1. Establishment of a functioning weaning food production plant. 2. Production of weaning food. 3. Distribution system functioning. 4. Market Research/Product Promotion. 	<p>Magnitude of Outputs:</p> <ol style="list-style-type: none"> (1) One plant. (2) 1st year 430 MT; 2nd year 570 MT; 3rd year 710 MT. (3) 4,000 retail outlets selling weaning food produced. 150 MCH centers distributing the weaning food. (4) Market Surveys conducted. Promotion Campaign conducted. 	<p>Visual inspection</p> <p>Production records</p> <p>Sales records</p> <p>Project records</p>	<p>Assumptions for providing outputs:</p> <p>Sufficient PL 480 Title II Commodities and other inputs will be available and arrive in timely manner.</p> <p>GPC will assign qualified personnel to implement project.</p>																																				
<p>Inputs:</p> <p>A.I.D.*</p> <ol style="list-style-type: none"> 1. Equipment and Materials. 2. Marketing 3. Commodities 4. Technical Assistance <p style="text-align: right;">Total</p> <p>GOC</p> <ol style="list-style-type: none"> 1. Commodities 2. Facilities and operations <p style="text-align: right;">Total</p> <p>* Plus Title II input.</p>	<p>Implementation Target (Type and Quantity)</p> <table border="1"> <thead> <tr> <th>FY 78</th> <th>FY 79</th> <th>FY 80</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>248.5</td> <td>62.0</td> <td>84.0</td> <td>394.5</td> </tr> <tr> <td>11.5</td> <td>23.0</td> <td>10.0</td> <td>44.5</td> </tr> <tr> <td>10.0</td> <td>20.0</td> <td>16.0</td> <td>46.0</td> </tr> <tr> <td>5.0</td> <td>10.0</td> <td>-</td> <td>15.0</td> </tr> <tr> <td><u>275.0</u></td> <td><u>115.0</u></td> <td><u>110.0</u></td> <td><u>500.0</u></td> </tr> <tr> <td>15.0</td> <td>34.0</td> <td>48.0</td> <td>97.0</td> </tr> <tr> <td><u>265.0</u></td> <td><u>70.0</u></td> <td><u>70.0</u></td> <td><u>405.0</u></td> </tr> <tr> <td><u>280.0</u></td> <td><u>104.0</u></td> <td><u>118.0</u></td> <td><u>502.0</u></td> </tr> </tbody> </table>	FY 78	FY 79	FY 80	Total	248.5	62.0	84.0	394.5	11.5	23.0	10.0	44.5	10.0	20.0	16.0	46.0	5.0	10.0	-	15.0	<u>275.0</u>	<u>115.0</u>	<u>110.0</u>	<u>500.0</u>	15.0	34.0	48.0	97.0	<u>265.0</u>	<u>70.0</u>	<u>70.0</u>	<u>405.0</u>	<u>280.0</u>	<u>104.0</u>	<u>118.0</u>	<u>502.0</u>	<p>USAID Controller's Records.</p> <p>Guyana Pharmaceutical Corporation Records.</p>	<p>Assumptions for providing inputs:</p> <ol style="list-style-type: none"> 1. AID and GOC funds available to finance inputs. 2. GPC personnel available.
FY 78	FY 79	FY 80	Total																																				
248.5	62.0	84.0	394.5																																				
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Listed below are, first, statutory criteria applicable generally to projects with FAA funds, and then project criteria applicable to individual fund sources: Development Assistance (with a sub-category for criteria applicable only to loans); and Security Supporting Assistance funds.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? IDENTIFY. HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?

Country check-list is up-to-date. See Small Farm Development/Black Bush Region PP. The standard item check-list has been reviewed.

A. GENERAL CRITERIA FOR PROJECT.

1. App. Unnumbered; FAA Sec. 653(b); Sec. 671

(a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project;
(b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure

This Project was not originally contemplated for funding in FY 78. A special advice of program change has been sent to each of the Committees advising them of the Project.

2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

Preliminary financial and other planning has been done and a reasonably firm cost estimate has been made.

3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?

No further legislative action is needed; with the exception of ratification of the Agreement by the Parliament.

4. FAA Sec. 611(b); App. Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per *the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973?*

Not applicable.

5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified the country's capability effectively to maintain and utilize the project?

Not applicable.

6. FAA Sec. 209, 619. Is project susceptible of execution as part of regional or multi-lateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. If assistance is for newly independent country, is it furnished through multi-lateral organizations or plans to the maximum extent appropriate?

No. It is a Pilot Project of modest size and would not be appropriate as a multilateral project or as a regional project at this stage.

A

7. FAA Sec. 601(a); (and Sec. 201(f) for development loans). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

The Project through the production and distribution of a weaning food will result in fostering private initiative in the agricut business fields.

8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

The Grant will provide for the purchase of equipment, supplies and technical services from U.S. suppliers and includes provision for the training of Guyanese personnel in the U.S. at U.S. institutions

9. FAA Sec. 612(b); Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services.

The GOG has agreed to provide more than 50% of the financing for this Project. There is very little foreign currency currently owned by the United States in Guyana, all of which have been received under a PL 480 program and are less than are needed to meet U.S. expenditures in Guyana.

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency and, if so, what arrangements have been made for its release?

No.

11. ISA 14. Are any FAA funds for FY 78 being used in this Project to construct, operate, maintain, or supply fuel for, any nuclear powerplant under an agreement for cooperation between the United States and any other country?

No.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(c); Sec. 111; Sec. 281a. Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production, spreading investment out from cities to small towns and rural areas; and (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions?

It is anticipated that malnourished pre-school children including those of the rural poor will benefit from the Project. The weaning food will be sold at a subsidized price to make it more accessible to low income families. The project will expand the amount of food available for children and thus improve their diet.

b. FAA Sec. 103, 103A, 104, 105, 106, 107. Is assistance being made available: [include only applicable paragraph -- e.g., a, b, etc. -- which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.]

- (1) [103] for agriculture, rural development or nutrition; if so, extent to which activity is specifically designed to increase productivity and income of rural poor; [103A] if for agricultural research, is full account taken of needs of small farmers;
- The Project will improve the nutritional status of pre-school children and thus will contribute, overtime, to enhancing general health of population.*
- (2) [104] for population planning or health; if so, extent to which activity extends low-cost, integrated delivery systems to provide health and family planning services, especially to rural areas and poor;
- Not applicable.*
- (3) [105] for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development;
- Not applicable.*
- (4) [106] for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is:
- (a) technical cooperation and development, especially with U.S. private and voluntary, or regional and international development, organizations;
- (b) to help alleviate energy problem;
- (c) research into, and evaluation of, economic development processes and techniques;
- (d) reconstruction after natural or manmade disaster;
- (e) for special development problem, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance;
- (f) for programs of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.
- Not applicable.*

(5) [107] by grants for coordinated private effort to develop and disseminate intermediate technologies appropriate for developing countries.

Not applicable.

c. FAA Sec. 110(a); Sec. 208(e). Is the recipient country willing to contribute funds to the project, and in what manner has or will it provide assurances that it will provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed" country)?

Guyana will contribute over \$400,000 (U.S.) in excess of the amount of the A.I.D. Grant.

d. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"?

No.

e. FAA Sec. 207; Sec. 113. Extent to which assistance reflects appropriate emphasis on: (1) encouraging development of democratic, economic, political, and social institutions; (2) self-help in meeting the country's food needs; (3) improving availability of trained worker-power in the country; (4) programs designed to meet the country's health needs; (5) other important areas of economic, political, and social development, including industry; free labor unions, cooperatives, and Voluntary Agencies; transportation and communication; planning and public administration; urban development, and modernization of existing laws; or (6) integrating women into the recipient country's national economy.

U.S. assistance in Guyana encourages development of trained personnel in agriculture, rural health and nutrition. Women and children will receive benefits from the program by the availability of a nutritious weaning food to supplement breast feeding, and the diet of children. The Project will encourage self-help in meeting the food needs of Guyana and in so doing will be supportive of the Government's policy to increase productivity and to encourage self-help in reaching that goal.

f. FAA Sec. 201(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civic education and training in skills required for effective participation in governmental and political processes essential to self-government.

The Project will support the GCG effort to diversify production and increase productivity in order to be self-sufficient in food crops. This is directly in support of the Government's goal to encourage self-help. Also the Project provides technical assistance and training in skills required for effective implementation of the Project.

g. FAA Sec. 201(b)(2)-(4) and -(8); Sec. 201(e); Sec. 211(a)(1)-(3) and -(9). Does the activity give reasonable promise of contributing to the development: of economic resources, or to the increase of productive capacities and self-sustaining economic growth; or of educational or other institutions directed toward social progress? Is it related to and consistent with other development activities, and will it contribute to realizable long-range objectives? And does project paper provide information and conclusion on an activity's economic and technical soundness?

This is a Pilot Project which is designed to test the capacity and feasibility of developing a nutritious weaning food for pre-school children. An evaluation plan has been developed which will enable an assessment of the economic and technical feasibility of the Project.

h. FAA Sec. 201(b)(6); Sec. 211(a)(5), (6). Information and conclusion on possible effects of the assistance on U.S. economy, with special reference to areas of substantial labor surplus, and extent to which U.S. commodities and assistance are furnished in a manner consistent with improving or safeguarding the U.S. balance-of-payments position.

There will be procurement of equipment and supplies, technical assistance and training in the United States. Thus the effects of the assistance on the U.S. economy will be positive.

2. Development Assistance Project Criteria (Loans only)

a. FAA Sec. 201(b)(1). Information and conclusion on availability of financing from other free-world sources, including private sources within U.S.

Not applicable.

b. FAA Sec. 201(b)(2); 201(d). Information and conclusion on: (1) capacity of the country to repay the loan, including reasonableness of repayment prospects, and (2) reasonableness and legality (under laws of country and U.S.) of lending and relending terms of the loan.

Not applicable.

c. FAA Sec. 201(e). If loan is not made pursuant to a multilateral plan, and the amount of the loan exceeds \$100,000, has country submitted to AID an application for such funds together with assurances to indicate that funds will be used in an economically and technically sound manner?

Not applicable.

d. FAA Sec. 201(f). Does project paper describe how project will promote the country's economic development taking into account the country's human and material resources requirements and relationships between ultimate objectives of the project and overall economic development?

Not applicable.

e. FAA Sec. 202(a). Total amount of money under loan which is going directly to private enterprise, is going to intermediate credit institutions or other borrowers for use by private enterprise, is being used to finance imports from private sources, or is otherwise being used to finance procurements from private sources?

Not applicable.

f. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

Not applicable.

3. Project Criteria Solely for Security Supporting Assistance

Not applicable.

a. FAA Sec. 531. How will this assistance support promote economic or political stability?

b. FAA Sec. 533(c)(1). Will assistance under the Southern African Special Requirements Fund be used for military, guerrilla, or paramilitary activities?

4. Additional Criteria for Alliance for Progress

Not applicable.

[Note: Alliance for Progress projects should add the following two items to a project checklist.]

a. FAA Sec. 251(b)(1), -(8). Does assistance take into account principles of the Act of Bogota and the Charter of Punta del Este; and to what extent will the activity contribute to the economic or political integration of Latin America?

Not applicable.

b. FAA Sec. 251(b)(3); 251(h). For loans, has there been taken into account the effort made by recipient nation to repatriate capital invested in other countries by their own citizens? Is loan consistent with the findings and recommendations of the Inter-American Committee for the Alliance for Progress (now "CEPCIES," the Permanent Executive Committee of the OAS) in its annual review of national development activities?

Not applicable.

MINISTRY OF ECONOMIC DEVELOPMENT
MINISTERIAL BUILDING
P.O. BOX 542,
GEORGETOWN,
GUYANA.



SEP 27 1 20 PM '78

ScB: 14/24/1

ACTION

Miss Edna Boorady,
Director,
United States Agency
for International Development,
Main Street,
Georgetown.

Dear Miss Boorady,

Weaning Food Project

An assessment of Guyana's current health status shows a major problem in the area of child health. This is reflected in the country's comparatively high levels of infant mortality due no doubt to malnutrition among children under 5 years of age.

Inadequate weaning practices have contributed to the poor nutritional status of children under 5. Imported weaning foods are expensive and therefore out of the financial range of lower income groups. Locally produced weaning foods are not regularly available. They are not nutritionally balanced and are subject to varying methods of preparation which in some cases further impair the nutritional content of baby foods.

In order to overcome malnutrition in the under 5's, Government has decided to embark on a Weaning Food Project so as to produce a low cost balanced baby food which would be made and distributed by the Guyana Pharmaceutical Corporation Ltd. Officers of this Corporation have already entered into discussions with your organisation for technical assistance for this project and have made certain arrangements for the launching of the project.

September 27, 1978

Director	
Asst. Director	
Secy. Gen.	
Controlling	
Program. Off.	
Legal Off.	
Finance Off.	
Gen. Secy.	
Lab. Serv.	
Pl. Serv.	
Food Serv.	
HSO	
Library	

AGRICULTURE

TYPED BY NAN (Perseant)

BY [Signature] DATE 9/29/78

AGR Due 10-3-78

12...

Miss Edna Soorady,
USAID Director.

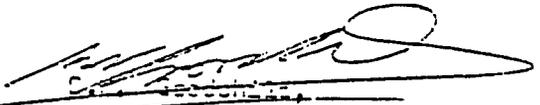
In order to formalise the arrangements so that a formal agreement could be signed, before the end of your fiscal year, the Government of Guyana would accordingly be grateful if USAID could assist by obtaining the following for the project.

- (a) Title II commodities.
- (b) Equipment for the plant.
- (c) Vehicles for distributing the product.
- (d) Packaging materials.
- (e) Technical inputs.
- (f) A grant for market development.
- (g) 75% of the raw material input.

An early reply would be appreciated.

With kindest regards.

Yours sincerely,


~~For Permanent Secretary,~~
Ministry of Economic Development.

Annex 4

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS PART I					1. TRANSACTION CODE <input type="checkbox"/> A ADD <input type="checkbox"/> C CHANGE <input type="checkbox"/> D DELETE		PAF 2. DOCUMENT CODE S				
3. COUNTRY/ENTITY Guyana					4. DOCUMENT REVISION NUMBER <input type="checkbox"/>						
5. PROJECT NUMBER (7 digits) <input type="text" value="504-0073"/>			6. BUREAU/OFFICE A. SYMBOL LA		B. CODE <input type="text" value="5"/>		7. PROJECT TITLE (Maximum 40 characters) <input type="text" value="WEANING FOOD DEVELOPMENT"/>				
8. PROJECT APPROVAL DECISION <input type="checkbox"/> A APPROVED <input type="checkbox"/> D DISAPPROVED <input type="checkbox"/> DE AUTHORIZED					9. EST. PERIOD OF IMPLEMENTATION YRS. <input type="text" value="0"/> <input type="text" value="3"/> QTRS. <input type="text" value=""/>						
10. APPROVED BUDGET AND APPROPRIATED FUNDS (\$000)											
A. APPROPRIATION		B. PRIMARY PURPOSE CODE		PRIMARY TECH. CODE		E. 1ST FY <u>78</u>		H. 2ND FY <u>79</u>		K. 3RD FY <u>80</u>	
						F. GRANT		I. GRANT		L. GRANT	
(1) FN		322		314		275		135		90	
(2)											
(3)											
(4)											
TOTALS											
A. APPROPRIATION		N. 4TH FY		O. 5TH FY		LIFE OF PROJECT		11. PROJECT FUNDING AUTHORIZED		A. GRANT	
		Q. GRANT		R. GRANT		T. GRANT		(ENTER APPROPRIATE CODE(S)) 1 = LIFE OF PROJECT 2 = INCREMENTAL LIFE OF PROJECT		B. GRANT LOAN	
		P. LOAN		S. LOAN		U. LOAN					
(1)						500				2	
(2)											
(3)											
(4)											
TOTALS								C. PROJECT FUNDING AUTHORIZED THRU <input type="text" value="8"/> <input type="text" value="0"/>			
12. INITIAL PROJECT FUNDING ALLOTMENT REQUESTED (\$000)										13. FUNDS RESERVED FOR ALLOTMENT	
A. APPROPRIATION		B. ALLOTMENT REQUEST NO. <u>2</u>				TYPED NAME (Chief, SERVICEMEN) _____ SIGNATURE _____ DATE _____					
		C. GRANT		D. LOAN							
(1) FN		275									
(2)											
(3)											
TOTALS											
14. SOURCE/ORIGIN OF GOODS AND SERVICES <input checked="" type="checkbox"/> 000 <input type="checkbox"/> 941 <input checked="" type="checkbox"/> LOCAL <input type="checkbox"/> OTHER _____					15. FOR AMENDMENTS, NATURE OF CHANGE PROPOSED						

FOR PROJECT USE ONLY	16. AUTHORIZING OFFICE SYMBOL	17. ACTION DATE			18. ACTION REFERENCE (Optional)	ACTION REFERENCE DATE		
		MM	DD	YY		MM	DD	YY

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS

PART II

Name of Country: Guyana
Name of Project: Weaning Food Development
Number of Project: 504-0075

Pursuant to Part I, Chapter 1, Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize a grant to the Government of Guyana of not to exceed Two Hundred and Seventy-Five Thousand United States Dollars (US\$275,000) to help in financing certain foreign exchange and local currency costs of goods and services required for the project as described in the following paragraphs:

The project has as its purpose the establishment within Guyana of the capacity for processing and distributing a nutritious weaning food made from locally grown food crops. The total concept of the project embraces a three-phase effort, of which this project would constitute Phase I, to determine the feasibility of developing a weaning food to be initially made from imported Title II food commodities which would be acceptable to consumers. The project, which include a PL 480 Title II component outside this grant, provides for the manufacture and distribution of a food supplement (weaning food) to help alleviate malnutrition among pre-school children. The food is to be pre-cooked, using low-cost extrusion cookers, and distributed predominantly through retail outlets, though a small amount (15 to 20%) will be distributed through maternal/child health clinics. The project is designed as a three-year pilot activity to study the feasibility of this method of providing food supplements to malnourished children and to establish a basis for extending the approach as an on-going nutrition intervention. It includes market testing and an information program for consumers.

If the pilot project is successful, it is planned to substitute locally grown food combinations, over time, on the basis of different product formulations with a view toward developing both a nutritiously rich supplement which is acceptable to the target group (pre-school children) and at a reasonable price.

I approve the total level of A.I.D. appropriated funding planned for this project during its three-year pilot phase of not to exceed Five Hundred Thousand United States Dollars (US\$500,000), all of which is to be grant funded during the period FY 1978 through FY 1980. Accordingly, in addition to the grant funds of up to US\$275,000 which I have authorized above, I approve further increments during that period of grant funding up to \$225,000, subject to the availability of funds, in accordance with A.I.D. allotment procedures.

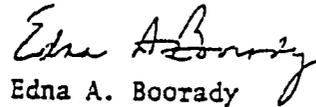
On receipt of the allotment of funds, the Mission will execute the project agreement with the Government of Guyana in accordance with A.I.D. regulations and Delegations of Authority and the following conditions precedent.

Conditions Precedent to any Disbursement:

Prior to any disbursements, or issuance of any commitment documents for equipment under the project agreement, the Government of Guyana shall furnish to A.I.D. in form and substance satisfactory to A.I.D.: (a) a list of required equipment; and (b) a time phased implementation plan for carrying out the Project.

Source and Origin of Goods and Services:

Except for ocean shipping, goods and services financed by A.I.D. under the project shall have their source and origin in the United States (Code 000 of the A.I.D. Geographic Code Book), or in Guyana, except as A.I.D. may otherwise agree in writing.



Edna A. Boorady
Director
USAID/Guyana

September 21, 1978
Revised

AGENCY FOR INTERNATIONAL DEVELOPMENT
PROJECT IDENTIFICATION DOCUMENT FACESHEET
To Be Completed By Originating Office

1. TRANSACTION CODE
 A • Add
 C • Change
 D • Delete

PID
 2. DOCUMENT CODE
 1

3. COUNTRY/ENTITY
 GUYANA

4. DOCUMENT REVISION NUMBER

5. PROJECT NUMBER (7 digits)
 504-0073

6. BUREAU/OFFICE
 A. Symbol LA B. Code 5

7. PROJECT TITLE (maximum 40 characters)
 WEANING FOODS DEVELOPMENT

8. PROPOSED NEXT DOCUMENT
 A. 3 2 - PRP
 3 - PP

B. DATE MM YY
 0 6 | 7 | 8

10. ESTIMATED COSTS
 IS000 of equivalent, \$1 = \$32,5452

9. ESTIMATED FY OF AUTHORIZATION/OBLIGATION
 a. INITIAL FY 7 | 8 b. FINAL FY 8 | 0

FUNDING SOURCE		Life of Project
a. AID Appropriated		480
b. OTHER US	1. PL 480, Title II	840
	2.	
c. Host Country		500
d. Other Donor(s)		
TOTAL		1,820

II. PROPOSED BUDGET AID APPROPRIATED FUNDS (S000)

A. APPRO- PRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. FIRST FY 1978		LIFE OF PROJECT	
		C. Grant	D. Loan	F. Grant	G. Loan	H. Grant	I. Loan
(1) EN	300	300		275		480	
(2)							
(3)							
(4)							
		TOTAL					

12. SECONDARY TECHNICAL CODES (maximum six codes of three positions each)
 310 | 331 | 334 | 350

13. SPECIAL CONCERNS CODES (maximum six codes of four positions each)
 BR | BL | BS | BU

14. SECONDARY PURPOSE CODE
 323

15. PROJECT GOAL (maximum 240 characters)
 To improve the general health of Guyana's pre-school children by providing nutritious weaning foods made from indigenous foods.

16. PROJECT PURPOSE (maximum 480 characters)
 To establish within Guyana the capacity for production and distribution of nutritious weaning foods made from indigenous foods.

17. PLANNING RESOURCE REQUIREMENTS (staff/funds)
 Approximately one person month of TDY services from AID/W staff or qualified contractor to assist in preparation of project paper.

18. ORIGINATING OFFICE CLEARANCE

Signature: *[Signature]*
 Title: Director, USAID/GUYANA

Date Signed MM DD YY
 03 | 30 | 78

19. Date Document Received in AID/W, or for AID/W Documents, Date of Distribution
 MM DD YY

PROJECT IDENTIFICATION DOCUMENT

Weaning Foods Development

(594-0073)

1. SUMMARY OF THE PROBLEM AND THE PROPOSED RESPONSE

a. The Problem

Food supplements for preschool children have been distributed to a very limited extent in Guyana. Until recently, small amounts of imported commercial weaning foods were available through retail outlets. However, these products were considered too expensive to be consumed by low-income families and represented a drain on scarce foreign exchange. Accordingly, importation has recently been discontinued. Locally made weaning foods are available in the market but for the most part these are simply packaged plantain flour and are not adequate from a nutrition standpoint. WFP has supplied limited amounts of wheat flour, cheese, CSM and other commodities for distribution to families of malnourished children through MCH centers. This program has had limited effectiveness because it reaches only a small proportion of the target group and because the food appears to be consumed largely by the family as a whole rather than by preschoolers. This program is scheduled to terminate in 1979.

The 1971 National Food and Nutrition Survey of Guyana revealed that 19.2% of children under 5 years of age suffered from either second or third degree malnutrition and 70% of rural and 50% of urban children in this age group had some form of malnutrition. In 1973 a surveillance system was set up, through the Maternal and Child Health Clinics of the Ministry of Health, to monitor the Nutritional Status of children below 5 years of age attending these clinics. A summary of the results obtained through this system is shown below:

Nutritional Status of Children
below 5 years of age by degree and year

	1973	1974	1975	1976	Jan-Oct. 1977
	%	%	%	%	%
Normal	52.3	42.8	45.9	47.0	45.5
1st Degree Malnutrition	32.2	40.5	39.3	39.6	40.2
2nd/3rd Degree Malnutrition	15.4	16.7	14.8	13.4	14.4

The relative increase in the incidence of second and third degree malnutrition in 1974 may be explained by the significant increase in the cost

of living following the escalation of energy (petroleum) costs.

The 1971 National Food and Nutrition Survey of Guyana recommended:

"That low-cost weaning foods, based on rice, legumes, plantain flour and soybean be manufactured industrially in Guyana, and that these foods be supplemented where necessary with Iron, Vitamin A/Thiamine, Riboflavin and Niacin to meet internationally accepted levels."

This recommendation has been adopted in Guyana's Food and Nutrition Policy (prepared by the Ministry of Health).

In 1973, the Fifth Caribbean Health Minister's Conference evolved a strategy to combat gastroenteritis and malnutrition in children under two years of age:

"It is strongly recommended that: Before 1st January 1977, each ministry of Health be enabled to purchase at a negotiated contract price, from a food processor in their own country or at any rate in the Caribbean, adequate quantities of an infant weaning food made up according to the Ministry's own specifications. (The constituents of the food may well include imported or even donated foods, but at least the processing and packaging should be local)."

In March 1977 the Government of Guyana's cabinet directed that the Guyana Pharmaceutical Corporation (a Government entity) be responsible for the production and marketing of a weaning food product to implement the policy recommendations cited above. The Guyana Pharmaceutical Corporation (GPC) has requested A.I.D. assistance in this undertaking. Such assistance would be consistent with the findings of the A.I.D. Health and Nutrition Assessment Team which visited Guyana in February 1978, to review the situation and advise the U.S.A.I.D. on courses of action.

b. The Response

(1) Purpose. The purpose of this project will be to establish within Guyana the capacity for production and distribution of nutritious weaning foods made from local foods. The activity will be related to programs in both the agricultural and health sectors. Agricultural policy and plans call for improved agriculture production and the increased national production of nutritious food crops; health policy activities encompass preventative medicine including special feeding programs for young children. Attainment of the immediate objective of this project would provide children below 5 years of age with a nutritious food supplement in order to improve their nutritional status and contribute to the larger sectoral objective of eliminating the protein - calory malnutrition that exists among pre-school children in Guyana. This project is conceived as a developmental three-year pilot effort to provide an operational feasibility test.

(2) Description of proposed project:

a. General. The project as proposed is an integrated approach to solving a priority development problem using grant project funds together with

Title II commodity imports. It will provide for the manufacture and distribution of a food supplement (weaning food) to help alleviate malnutrition among preschool children in Guyana. The food is to be processed in a factory funded through the project and is to be made from ingredients supplied partly by the GOG and partly by grant project funds but predominantly from PL 450 (Title II) commodities. The food is to be precooked using low-cost extrusion cookers. It is to be distributed through retail outlets at a price which will permit recovery of manufacturing and distribution costs. In addition, approximately 10 - 15 percent of the production will be purchased by the GOG and distributed free of charge through MCH centers. The project is designed as a three year pilot project to study the feasibility of this method of providing food supplements to malnourished children and to establish a basis for extending the approach as an ongoing nutrition intervention. The follow-on project would be expected to include increased levels of local inputs and diminished levels of imported and grant inputs. Thus the Title II commodities will provide the needed interim assistance to test feasibility and acceptability of locally produced weaning foods, with the ultimate objective of substituting foods which are locally produced as they become available through crop production efforts, with ultimate transfer of full responsibility to GOG for continuation of the project.

b. Estimated project outputs: During the three-year pilot phase the annual production of weaning food would be approximately 900 tons which would represent an adequate intake for 20,000 children at about 4 ounces per day. This population group represents 15% of the total under 5 years of age in Guyana (130,000 based on the 1970 Census). The project also would serve to provide the experience needed to determine the feasibility of subsequent, expanded production of weaning foods.

c. Estimated physical resources required:

- (i) Building facility for a factory.
- (ii) Production equipment.
- (iii) Quality control equipment.
- (iv) Packaging equipment and material.
- (v) Transportation equipment.
- (vi) Food commodities for processing.

d. Estimated technical resources required:

- (i) Consultant engineering services for plant design, equipment selection, and operational start-up of machinery.
- (ii) The services of a product formulation expert.
- (iii) Marketing expertise for product promotion.

(3) Estimated Disbursement Period:

Three years.

c. Assumptions Pertinent to project success:

It is assumed that a weaning food product can be made acceptable to the Guyanese consumers. To do this the product must have acceptable properties of sight and taste as well as value for money. Particular emphasis will therefore be needed on product formulation together with promotional marketing.

d. Related activities by Government of Guyana and other donors:

No manufacture of weaning food has previously been undertaken in Guyana. At present there is a system of distribution through the Maternal and Child Health Clinics of foods such as wheat flour, corn-soya-milk, dry skim milk and cheese. These foods are donated by the U.N. World Food Program and the Governments of Canada and New Zealand.

Distribution on a relatively small scale (reaching some 3,000 children), is made to mothers of malnourished children.

e. Alternatives to the project:

The simplest alternative to this project would be the continued and possibly expanded distribution of donated foods, in the form of food parcels, through the Health Clinics. The proposed project has several advantages over this system:

- (1) A greater number of children would be reached since the present scheme only benefits some 3,000 children while the proposed project would provide weaning foods for up to 20,000 (and potentially to all children).
- (2) The Health Clinics do not have storage facilities for large quantities of food, thus the capacity for expanding such an activity through them is limited.
- (3) The weaning food would be consumed specifically by the child whereas the elements of the distributed food parcels usually are shared among the entire family.
- (4) Weaning food production would add impetus to the local food manufacturing industry and would offer opportunities for the useful transfer of appropriate technologies.

This project is selected also because of the favorable findings of the Health and Nutrition Team's review. The GPC has a history of successful project implementation and is presently establishing a food processing unit which will be responsible for project implementation.

f. Intended beneficiaries:

The intended beneficiaries ultimately are the children below 5 years of age in Guyana. The weaning food would be made available at retail food outlets throughout Guyana. In addition, the Ministry of Health would distribute a percentage of production through the Maternal and Child Health Clinics. Thus

virtually all families in the country would have access to the product.

5. Spread effect of the product:

Waning food projects are attracting greater attention throughout the world, especially with the advent of low-cost extrusion technology. Were this project to be successful, it might well serve as a model for replication in other less developed countries. Should the results of this pilot effort so indicate, production could be expanded to the level commensurate with the demand for waning foods.

Also, a successful waning food factory in Guyana might manufacture waning food products for other territories in the region, thus helping meet the needs of the Caribbean community.

2. FINANCIAL REQUIREMENTS AND PLANS

a. Estimated project costs (\$000)

<u>Item</u>	<u>Financing Source</u>	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>LOP</u>
Equipment/Materials	USG	200	50	50	300
Facilities	GOG	85	65	65	215
Market Research	USG	5	5	5	15
Product Promotion	USG	20	10	--	30
Vitamin - Mineral Mix	USG	25	25	25	75
Raw Foods	USG	280	280	280	840
Raw Foods	GOG	45	45	45	135
Personnel	USG	25	25	10	60
Personnel	GOG	<u>50</u>	<u>50</u>	<u>50</u>	<u>150</u>
	<u>TOTALS</u>	<u>735</u>	<u>555</u>	<u>530</u>	<u>1,820</u>

b. Discussion

(1) General. All US financing is proposed as grant funding for the three-year pilot project. Exclusive of PL 480 (Title II) costs, USG funding is estimated to total \$480,000 over the life of the project. The largest part of this (\$275,000) would support initial start-up costs with two subsequent years' funding estimated at \$115,000 and \$90,000. GOG funding over the life of the project is estimated at \$500,000.

(2) Equipment and Facilities. AID will fund the procurement of the equipment needed for production, quality control, packaging, and transportation of the weaning foods. The GOG will furnish the site and buildings for the factory including construction to expand existing buildings.

(3) Commodities. It is proposed that an estimated 2,100 tons of food commodities (milk, soy, corn) be provided under PL 450, Title II, at an estimated cost of \$840,000 over the life of the project. Initial estimates range from \$750,000 to \$1,000,000 depending upon the specific mix of commodities determined appropriate. USDA has indicated its readiness to provide a small quantity of commodities (10-20 tons) in advance of project implementation to permit testing of various mixes and thus to facilitate project planning for commodity requirements. The GOG will contribute \$135,000 of locally available food products (rice and sugar) which will constitute about 25 percent of the raw materials for the weaning food mix. AID will grant finance the purchase of needed vitamin - mineral mixes at an estimated cost of \$25,000 per year. The GOG has already made available to GPC adequate storage facilities for the quantities of food commodities envisioned. The project, if successful, can be expected to foster increased local production of needed commodities by generating additional demand for such commodities.

(4) Personnel. AID will fund 12 person months of short-term technical assistance over the life of the project. The GOG will provide an estimated 540 person months of supervisory and skilled labor.

3. DEVELOPMENT OF THE PROJECT

a. Background

The GPC has already invested a considerable planning effort in this project idea. Following its designation in 1977 as the responsible agency for weaning foods production the GPC solicited U.S. advice and assistance in developing a production project. A USDA technician visited Guyana in 1976 to confer with GPC officials, and following that visit the GPC sent its technical director and product development chemist to Central America to observe Brady Extrusion Cooker demonstrations (Guatemala/INCAP) and operations (Costa Rica). At the same time the GPC sought to obtain the use of one of USDA's demonstration cookers. When that proved impossible, the GPC initiated action to procure its own extrusion cooker which it recently acquired. The USDA technician returned in early 1978 in conjunction with an A.I.D. Health and Nutrition Team to review progress and advise on further project development. Arrangements have been made for USDA to supply small amounts of food commodities which will permit operational tests of the extrusion equipment as well as for Colorado State University to provide technical assistance in cooker operation.

b. Further Development

(1) The GPC is informed of similar project undertakings elsewhere in the world and is alert to the potential difficulties inherent in such projects.

The principal liability identified is the acceptability of the product to the consumer. Experience has shown that mothers must be persuaded of a weaning food's visual and taste desirability before they will accept it for their children. Consequently the GPC intends to pursue tests designed to reach a formulation satisfactory to Guyanese.

(2) Another marketing consideration is the cost of the product. While the project proposal includes a provision for free distribution of the weaning foods through Health Clinics, the bulk of the foods produced would be distributed commercially through retail food outlets. The GPC has already undertaken some cost analyses which indicate that weaning foods can be produced at a cost attractive to consumers. These analyses will be refined in preparing the project paper along with cost projections for equipment and commodities.

(3) The project paper will also need an analysis of the market situation for weaning foods and the development of a marketing element for the project plan.

c. Documentation Schedule

Because of the substantial planning already conducted by the GPC, it is considered appropriate to move directly from the PID to the PP. Any issues raised in review of the PID will be addressed in the PP which could be prepared by June, 1978, for FY1978 project funding.

d. Resources Required

Responsibility for project implementation will fall to the Ministry of Economic Development and Cooperatives and its subordinate element, the GPC. The GPC has taken the initiative to begin project development and is capable and prepared to work closely with A.I.D. planners to bring the project to fruition. Approximately one month of a qualified consultant's time is the estimated need for PP preparation. Because of its experience with this type of activity, USDA may be the best source of such assistance.

4. ISSUES OF A POLICY OR PROGRAMMATIC NATURE

a. Funding Sources and Uses

This project envisions a combination of A.I.D. grant funding and P.L. 430 (Title II) commodities. Both inputs will be required over the three-year life of the project. The proposed sale of the product which includes Title II commodities should be reviewed. Section 206 of P.L. 430 allows sales of such commodities to help finance self-help programs to help develop nutritious foods.

b. Pilot Nature of the Project

The total concept of the proposed activity embraces a three-phase effort of which this project would constitute Phase I. Should project evaluations over the life of this project suggest its long term viability, a follow-on project (Phase II, three years) would be envisioned to expand productive capacity and

begin replacing imported inputs with locally produced commodities. Phase III then would be the long term conduct of the activity on a self-sustaining basis.

1. INTRODUCTION:

The Mission has, with the assistance of the staff at the Guyana Pharmaceutical Corporation limited (GPC) and Food Technologist Rod Crowley of the USDA prepared a response to the issues raised in State 136423. This report will follow the same format as the cable.

A. Macro-Economic Impact

In order to determine the magnitude of the GOG contributions which would be required to sustain the project, manufacturing and distribution costs have been prepared. The projected detailed costs are presented in Annex A Table I and these are summarized in Table I. The potential magnitude of the GOG subsidy is the difference between the cost of production and the factory selling price. The selling price alternatives are also presented in Table I.

We have been told that the experience of other countries in producing weaning foods on a commercial, self-sustaining basis as largely been a failure. All of the reasons are not known, but selling price has been identified in some cases as one of the causes of failure.

The GPC feels that the retail price must be competitive with currently used local weaning foods. According to a survey conducted by MCH of mothers using the MCH centres, the most common weaning food among low income consumers is a mixture of plantain flour, wheat flour and rice flour with water. The current retail price of alternative products in Guyana are:

	<u>US\$ per pound</u>
Imported Weaning Foods	US\$1.817
Mixture of Plantain Flour, Wheat Flour & Rice Flour (25%-50%-25% respectively)	US\$0.238
GPC Proposed Price	US\$0.196

The imported weaning foods are only purchased by upper income groups. The GPC's goal is to make their weaning food affordable to the lower income groups. For this reason the selling price is proposed at US\$0.196 per pound.

Based on the price structure shown in Alternative I of Table I, the GOG would not have to subsidize the program (assuming no free distribution through the MCH centre). This price of US\$0.517 is considered too high to reach target group consumers.

Using US\$0.196 as the retail price and deducting the retail and wholesale margins or mark-ups, the factory door price would be US\$0.143 per pound (see selling prices Alternative 2 in Table I). By subtracting the factory door price from the production cost of US\$0.391 per pound, we obtain the subsidy of US\$0.243 per pound. By the time full production of 850/UT per year is reached in year five, the total subsidy would amount to US\$456,198.

The GOG is aware of the magnitude of their commitment to this project in all phases and has assured the Mission that it is fully prepared to support the costs involved in implementing and maintaining the program, depending of course, on successful completion of Phase I and Phase II. The basis for the GOG's support rests on (a) recognition that approximately 55% of the preschool children are chronically malnourished and in need of nutritious supplementary foods (b) a standing policy and commitment to improve the quality of life of Guyanese people, and (c) an explicit policy enunciation that (1) "Low cost nutritious weaning foods based on rice, legumes, plantain flour and soybean should be manufactured industrially in Guyana and these foods should be fortified where necessary with iron, Vitamin A, Thiamine, Riboflavin and Niacin to meet the internationally accepted levels".^{II}

The Mission has obtained the assurance of the Minister of Health that GOG places a high priority on the problem of nutrition. Furthermore, he is fully aware that to maintain the weaning foods production project could require a GOG subsidy of nearly US\$500,000 per year at the conclusion of Phase II. The Government is committed to provide that subsidy.

The PID states on page 3 "The project is designed as a three-year pilot project to study the feasibility of this method of providing food supplements to malnourished children and to establish a basis for extending the approach as an on-going nutrition intervention. The follow-on project would be expected to include increased levels of local inputs and diminished levels of imported and grant inputs". The pilot nature of this project and the need for a follow-on project may not have been made adequately clear in the PID. The overall program is envisioned to take place in three distinct phases as described below:

Note: II - Recommendation 3,10 of the Food and Nutrition Policy of Guyana

PHASE I.

Having a duration of three years is a pilot project in which a weaning food factory is built, the food is manufactured and distributed through both retail outlets and MCH centres with accompanying advertising and promotion, and the effectiveness of reaching the target population, the operational costs and other relevant factors are assessed. AID support to Phase I will include PL 480 Title II commodities as well as packaging materials which are unavailable in Guyana but which are under development and expected to become available during Phase II. At the end of Phase I, the program will be evaluated and extended or modified or terminated as appropriate.

During Phase I 84% of the raw food materials would be provided by PL 480 Title II while the GOG would provide 16% from local products (see Table II for US\$ amounts).

PHASE II.

Also having a duration of three years a follow on to Phase I is planned in which distribution is expected to expand to reach essentially the full market potential. AID financing and grants of PL 480 Title II commodities will be phased out during Phase II and the program will be sustained thereafter totally with local ingredients, local packaging and local financing. The experience of the Phase II project would be evaluated and used to modify and improve the program as appropriate. During this phase, the PL 480 Commodities will be phased out as follows:

	FY 81	FY 82	FY 83
PL 480 Title II	80%	46%	15%
GOG	20%	54%	85%

PHASE III.

The on-going GOG weaning food program, represents continuing extension of Phase II in which weaning food is made available to Guyanese preschool children as an established, GOG-funded nutrition intervention. During Phase III, of course, the GOG will provide 100% of all inputs.

The Mission and GFC believe that the project should be phased as described above because of the uncertainties involved in the pilot phase and because it is desired that the project be established firmly with a product formulation which can assure success of the project. The Mission does not believe that locally produced substitutes will be available during the pilot phase and therefore propose the gradual shift from PL 480 to local products during Phase II.

Although public investment in social services sector is scheduled to be reduced from forty to eight percent in the next plan period i.e. 1973-1981, the health subsector of overall social services sector is not expected to be reduced by that amount. The social services sector includes housing, education and welfare subsectors and these activities are expected to bear the brunt of the thirty one percent cut. In CY 1973, the first year of the new four-year plan, health budget estimate reflects the figure of \$35.9 million, up from \$32.1 million for CY 1977.

SUMMARY OF PRODUCTION COSTS

(All Values in U.S. Dollars)

Market Year

T O T A L P R O D U C T I O N C O S T S

Annual Production	1	2	3	4	5
	430 MT 948,000 LBS	570 MT 1,257,000 LBS	710 MT 1,565,000 LBS	760 MT 1,720,000 LBS	850 MT 1,874,000 LBS
Raw Materials and Packaging	230777	305998	380977	418709	456193**
Labor and Utilities	29852	38248	47640	51573	57036
Factory Operations	50767	52703	63620	64578	65536
Selling and Admin.	53341	62565	71790	76465	81017
Management	<u>7324</u>	<u>32520</u>	<u>46570</u>	<u>62005</u>	<u>73763</u>
	371081	492034	612597	673330	733550

P E R P O U N D P R O D U C T I O N C O S T S

Raw Materials and Packaging	.243
Labor and Utilities	.030
Factory Operations	.054
Selling and Admin.	.056
Management	<u>.003</u>
Total Production cost per pound	<u>.391</u>

	.243	.243	.243	.243
	.030	.030	.030	.030
	.042	.041	.038	.035
	.050	.046	.044	.044
	<u>.026</u>	<u>.031</u>	<u>.036</u>	<u>.039</u>
	.391	.391	.391	.391

Based on Annex A, Table I
Selling Price Alternatives

Alternative 1	US\$/Lb.
Factory Cost	.391
Wholesale Margin (13%)	<u>.051</u>
Subtotal	.442
Retail Margin	<u>.075</u>
Price Required to cover all Production costs	<u>.517</u>

** Assuming the minimum selling price alternative, the raw material and packaging costs would be the GOG subsidy and would amount to US\$456,193 per year by year 5.

Alternative 2.	US\$/Lb.
Factory Cost less materials and packaging (.391-.243)	.148
Wholesale Margin (13%)	<u>.019</u>
Subtotal	.167
Retail Margin (17%)	<u>.029</u>
Minimum Price	<u>.196</u>

SUMMARY PROJECT COSTS DURING ALL THREE PHASES

	<u>P H A S E I</u>			Total Life of Pilot Project	<u>P H A S E II</u>			Total Phase II	Phase III Each Year
	<u>FY 78</u>	<u>FY 79</u>	<u>FY 80</u>		<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>		
	(000 of US\$)								
<u>AID Grant Input</u>									
Equipment and Materials	230	40	50	320	60	100	112	272	-
Market Research	5	5	5	15	-	-	-	-	-
Product Promotion	20	10	-	30	-	-	-	-	-
Vitamin Mineral Mix	10	20	20	50	20	25	25	70	-
Personnel	<u>35</u>	<u>20</u>	<u>10</u>	<u>65</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
TOTAL	300	95	85	480	80	125	137	342	-
<u>PL 480 TOTAL II Input</u>	80	180	250	510	275	150	50	475	-
<u>COG Input</u>									
Materials	15	34	40	97	50	177	277	504	434
Facilities	215	-	-	215	-	-	-	-	-
Personnel & Operation	<u>50</u>	<u>70</u>	<u>70</u>	<u>190</u>	<u>70</u>	<u>70</u>	<u>70</u>	<u>210</u>	<u>70</u>
TOTAL	280	104	118	502	120	247	347	714	504

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3. Capabilities of G.P.C.

G.P.C. was originally a British owned firm, founded in 1930, which was nationalized in 1976. GPC produces 30 products including proprietary drugs, generic drugs, toiletries, laundry soap etc., employs 300 people and had sales of US\$5.3 million in 1977.

The corporation even before nationalization had decided to move into the area of food production. GPC created a Food and Nutrition Department (see the organization attached as Annex B). This department is headed by a graduate Food Technologist/Nutritionist and has, in addition, one graduate Food Microbiologist and one technical assistant with a diploma in Food Technology. The operations of this department fall under the supervision of the Technical Director of GPC, who has a Doctorate in Food and Nutrition.

Although the staff are well trained they do lack practical experience. The Technical Director, however, has had three years experience in managing a milk pasteurization plant and seven years managing GPC's Pharmaceutical operations. The head of the department, who will be the Weaning Food Factory Manager, will be visiting the CARE financed weaning food plant in Costa Rica in order to familiarize himself with the processing operations.

The Weaning Food Project is first priority for the Food and Nutrition Department. The Corporation purchased an extrusion cooker which is being used to produce trial samples of weaning foods, as well as other commercial products e.g. an instant pea soup, a breakfast cereal and cornmeal. The project will be financing technical assistance in the area of Plant Engineering and operations, product formulation, as well as, marketing.

Marketing and Promotion

GPC has three University graduates on its Sales and Marketing Department staff. Of the total sales of GPC's current products on the local market, 40% are made to wholesalers and 60% to retailers. The present local distribution net work encompasses 95% of all retailers who are eligible to sell food and drugs. The weaning food will be distributed through these same channels.

Promotion of GPC's products is carried out in conjunction with the Carib Advertising Agency, another former Becker-owned company which was established in 1951. A proposed promotion strategy for the Weaning Food has been devised and includes promotion through various media: radio spots, radio documentaries, newspaper advertisements, posters, point of sale displays, cinema spots and free distribution of samples.

Table III below shows an overview of the proposed marketing plan for the product. The final details of the Marketing strategy will be worked out in conjunction with personnel from Texas A&M University through AID. The Mission is currently assisting with Prototype development using Project Development and Support Funds.

TABLE II - OVERVIEW OF WEATHER FOOD MARKETING PLAN

	PROTOTYPE (JULY 1st - SEPT. 30th)	TEST MARKETING (OCT. 1st - Dec. 31st, 1970)	FULL MARKETING (MARCH 1st 1970 - SEPT 30th 1971)
CONCEPT	Acceptability to be assessed from consumer panel	Acceptability to be assessed from Sales volume, consumer survey and feedback from retailers and DCH personnel.	Acceptability as for Test Marketing.
DESIGN	To be assessed from consumer panel testing.	No assessment required.	Consumption pattern (Income, Ethnic Groups, location) to be determined from consumer survey.
CONCEPT	To be devised from consumer study. Concepts for the promotional theme to be decided on.	Effectiveness of theme to be assessed from consumer survey	To be assessed from consumer panel testing. Price elasticity to be determined.
PACKAGING	Type of packaging material to be determined on technical judgement	Consumer survey to be used to verify choice of size, type of material (in relation to losses) and ease of closure.	Effectiveness of entire promotional campaign to be assessed.
MARKETING (Distribution)	No Assessment required.	Effectiveness to be assessed from response by salesmen and consumer survey.	No assessment required.
ESTIMATED COST OF MARKETING	\$5,000	\$5,000	\$10,000

C. Linkages To The Agricultural Sector

The formulation of the product is based on ingredients that are being produced with exportable surpluses or which will be produced in quantities that would ensure an adequate supply in the near future. Rice and sugar are already being produced in exportable quantities. The other two major ingredients are corn and soybean. By the time full market potential is reached the plant will require 340 MT of corn and 620 MT of soybean (to supply both the soy flour and soybean oil) per year. The following presents past production and import figures for corn and soybeans.

<u>CURRENT CORN AND SOYBEAN PRODUCTION AND IMPORTED DATA</u>						
	1972	1973	1974	1975	1976	1977
	MT	MT	MT	MT	MT	MT
<u>Corn</u>						
Imports	4456	7863	5822	6287	8289	4482
Production	2800	2700	2700	5800	4300	8500
Total Apparent Consumption	7256	10563	8522	12087	12589	12982
<u>Soybeans</u>						
Imports	-	80	1096	1925	5903	4290
Production	-	-	27	41	13	20
Total Apparent Consumption	-	80	1123	1966	5916	4310

In December 1976, Guyana, in cooperation with the Government of St. Kitts-Nevis-Anguilla and Trinidad and Tobago launched a project known as the Caricom Corn and Soybean Company (the project also produces black-eye). The first crop of corn and black-eye was harvested in May 1977 on 550 acres. In 1978 production will be increased to 240 acres of soybeans; 300 acres of blackeye and 1400 acres of corn. The project intends to expand at the rate of 1000 acres per year until it reaches 5000 acres. After an assessment is made the ultimate goal is about 10,000 acres.

Based on current average yields, the additional acreages from this project alone could increase soybean production by more than the 620 MT required for the weaning food by 1983. As for corn, the Caricom project would be producing more than the 340 MT required by this project by 1981.

In addition to the Caricom project, the GCG is placing a heavy emphasis on self-sufficiency in agricultural production. A substantial investment is planned in programs designed to increase the production of grain legumes including soybeans. Other programs are aimed at corn production.

While it is recognized that self-sufficiency will not likely be attained in either corn or soybeans by the time the phase out of PL 480

Title II takes place, the Mission believes that the GOG is making a concentrated effort and that production will have increased sufficiently to assure an adequate supply of these commodities to the weaning food plant.

JPC will obtain these locally produced commodities under agreements (similar to those to be established for sugar and rice) with the Guyana Marketing Corporation (GMC) and with the Caricom Corn Soybean Company. These agreements will specify the quantities to be purchased and the price.

The proposed formulation contains non-fat milk powder. This has been incorporated into the product partly because of its high quality protein content and partly because it produces a desirable mouth feel. The Agricultural Program for expansion of milk production has a projection for self-sufficiency by 1986. This would mean that the weaning food would still be dependent on imported non-fat milk powder in Phase III. It is hoped that Agencies such as WFP, UNICEF, The Canadian Government, and the New Zealand Government would at that time still be in a position to make donations of this commodity. Failing this kind of assistance, it would be necessary to purchase on the international market or change the formulation and use indigenously produced commodities only. This latter alternative is not recommended because of possibly serious consequences to the market acceptability of the product at that time.

D. Nutrition Strategy

The Health/Nutrition Sector Assessment has just recently been completed and it strongly endorses the Weaning Food Project as a meaningful nutrition intervention in Guyana. The Assessment devotes all of Part IV to a discussion of the project and outlines a plan of action to be followed in developing the project. That plan has been followed up to the present time. All of the other recommendations for the Nutrition Sector are being followed by the Mission.

E. Project Beneficiaries

Table IV shows the estimated number of beneficiaries and their per capita consumption.

TABLE IV.

ESTIMATED NUMBER OF BENEFICIARIES AND
PER CAPITA CONSUMPTION OF WEANING FOOD

CLASSIFICATION	PER CAPITA CONSUMPTION (G/DAY)	POTENTIAL CONSUMER CLASSIFICATION (NO)	ESTIMATED CONSUMERS		CONSUMPTION (MT/YEAR)
			(% OF CLASS)	(NO)	
0 - 4 Months	0	10,000	0	0	0
4 -12 Months	40	20,000	50	10,000	146
1 - 2 Years	75	30,000	40	12,000	329
2 - 5 Years	25	90,000	20	10,000	164
MCH	45	20,000*	45	9,000*	150
MISC.**	-	-	-	-	50
TOTAL		150,000	35	49,000	839 or 850

*MCH consumers are the most malnourished, lowest income segment of the 20,000 pre-school children attending MCH centres

** Children 5 - 15, adults, elderly, etc.

As mentioned under the B above, part of the marketing plan, includes testing consumer acceptability of the product as well as other factors e.g. packaging, price, organoleptic properties, etc. This market testing is part of the project. Conclusions regarding the results are not available at this time.

Since the weaning food is intended to be a supplement to mother's milk and other foods, depending on the age of the child, the nutritional impact of this project is difficult to determine. The exact formulation will be determined by testing. However, it is proposed that the food would contain 16 grams of protein and 400 calories per 100 grams of product. The vitamin and mineral levels will be added in the amounts recommended by the USDA Food Technologists. Based on this formulation, the following table presents estimated percentages of the recommended daily allowance of nutrients each beneficiary would receive.

TABLE V.

% RDA* SUPPLIED BY PROPOSED WEANING FOOD

NUTRIENT	% RDA SUPPLIED IN EACH AGE GROUP		
	4 - 12 months	1 - 2 years	2 - 5 years
PROTEIN	52	84	25
ENERGY	20	21	10
VITAMIN A	100	100	100
THIAMINE	100	100	33
RIBOFLAVIN	64	75	20
NIACIN	60	66	19
VITAMIN C	80	100	50
CALCIUM	30	100	63
IRON	100	100	60

From Table IV:			
Number of Beneficiaries			
	10,000	12,000	18,000
Plus 9,000 MCH Beneficiaries from 4 months - 5 years			

* HANDBOOK OF HUMAN NUTRITIONAL REQUIREMENTS
WHO MONOGRAPH SERIES NO. 61

One additional benefit of the project is that the weaning food plant will create 12 new jobs during the first year with 10 additional jobs created in the third year when the plant goes on a two-shift operation. These 22 jobs will include plant supervision, machine operators, quality control and laborers.

STATE DEPARTMENT
WASHINGTON, D.C. 20541
AUG 78
STATE WASH DC
AND BARSBY GEORGETOWN 3175

STATE 00000
15 AUG 1980 10 50 AM RECD: 15 AUG 80

SECTION 1 OF 2 STATE 210626/1

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D.C. 11652: N/A

TASS:

SUBJECT: WEAKING FOODS DEVELOPMENT GRANT PROJECT -- INTERIM REPORT

REF: (A) 7/1/76 TRANSMITTAL OF INTERIM REPORT; (B) STATE 116425

Director	
Asst. Dir.:	
Adm. Serv.	
Ext. Aff.	
Gen. Inv.	
Ident. Div.	
Intell. Div.	
Lab.	
Legal Coun.	
Plan. & Insp.	
Rec. Mgmt.	
Tech. Serv.	
Training	
Off. of Cong. & Public Affairs	
Telephone Rm.	
Director's Sec'y	

Handwritten: Kca (K)

1. AID/N REVIEWED SUBJECT INTERIM REPORT AND APPROVED THE PROJECT FOR FINAL DESIGN AND PREPARATION OF PP. THE MISSION, HOWEVER, SHOULD ASSURE THAT THE FOLLOWING CONCERNS ARE ADDRESSED:

(A) ECONOMIC AND FINANCIAL ANALYSIS. GIVEN THAT THIS IS A PILOT PROJECT DESIGNED TO DEVELOP AN ACCEPTABLE WEAKING FOOD BASED ON INDIGENOUS FOODS, THE FINAL FORMULA SHOULD BE SELECTED BY TESTING DURING THE INITIAL YEAR OF PRODUCTION. IT IS IMPORTANT, HOWEVER, TO INCORPORATE INTO THE PROJECT DESIGN PERIODIC ANALYSIS DURING THE FIRST TWO YEARS OF THE PROJECT OF RELATIVE COSTS OF ALTERNATIVE FORMULAS AND THE RELATIVE COSTS AND LOCAL AVAILABILITY OF FOOD INPUTS FOR DIFFERENT FORMULAS.

THE PP SHOULD ALSO PROVIDE FOR AN IN DEPTH EVALUATION DURING THE THIRD YEAR OF THE PROJECT IN ORDER TO ASSESS THE DESIGN AND LONG TERM ECONOMIC AND FINANCIAL FEASIBILITY OF WEAKING FOOD PRODUCTION FROM INDIGENOUS FOODS AND THE ECONOMIC/COSTS AND RISKS PROVIDED THE BASIS FOR A DECISION ON WHETHER TO PROCEED TO PHASE II. THE EVALUATION SHOULD INCLUDE THE FOLLOWING: (1) AN ANALYSIS OF THE LOCAL AVAILABILITY AND COSTS OF FOODS REQUIRED FOR VARIOUS WEAKING FOOD FORMULAS AND THE COSTS OF OTHER WEAKING FOODS USING BASELINE DATA GATHERED THROUGHOUT THE PROJECT; (2) ANALYSIS OF CONSUMPTION LEVELS AND PATTERNS OF GPC PRODUCT; (3) ANALYSIS OF PRICE OF GPC'S WEAKING FOODS RELATIVE TO PRODUCTION COSTS AND TO SUBSTITUTE FOODS (WHETHER READY-MADE OR HOME-FORMULATED) -- AND THE EFFECTS OF PRICE ON CONSUMPTION; (4) ANALYSIS OF DISTRIBUTION OF WEAKING FOODS THROUGH RETAIL AND THROUGH NON CENTERS; (5) EVALUATION OF GOVERNMENT CAPACITY TO MAINTAIN AND EXPAND PRODUCTION IN SUBSEQUENT YEARS GIVEN LEVELS OF SUBSIDY.

Handwritten notes:
Don't cancel
the evaluation
don't make
any adjustment
multiple
non

AN INTEGRATED STRATEGY. THE FOLLOWING COMMENTS ARE
FOR THE PROMOTIONAL GUIDANCE FOR PP DESIGN:

THE 1977 INFANT NUTRITION AGREEMENT TO THE INTERNATIONAL
DEVELOPMENT AND FOOD ASSISTANCE ACT CALLS FOR "AID TO
DESIGN AND CARRY OUT IN PARTNERSHIP WITH DEVELOPING
NATIONS A MULTIFACETED STRATEGY DESIGNED TO PROMOTE BREAST-
FEEDING WITHIN THE CONTEXT OF INTEGRATED PROGRAMS OF
NUTRITION AND HEALTH IMPROVEMENT FOR MOTHERS AND CHILDREN."
USAID IS NOW PREPARING AN AGENCY WIDE INFANT NUTRITION
STRATEGY AND IN THE PAST YEAR HAS EXPLORED WAYS OF
INTEGRATING ACTIVITIES INTO ONGOING PROGRAMS THAT WOULD
ENCOURAGE BREASTFEEDING AND IMPROVE INFANT NUTRITION.

TWO NUTRITION EDUCATION COMPONENTS COULD BE ADDED TO
THE SUBJECT PP WHICH WOULD STRENGTHEN THE PROJECT'S
CAPABILITY TO IMPROVE INFANT NUTRITION. AS PART OF THE
PROMOTIONAL CAMPAIGN FOR THE COMMERCIALLY DISTRIBUTED
PRODUCT AND AS A SEPARATE NUTRITION EDUCATION COMPONENT,
DIRECTED TO THE POOR MOTHERS RECEIVING THE FREE WEANING
FOOD THROUGH THE MCH SERVICES, EFFORTS SHOULD BE MADE TO
STRESS THAT THE WEANING FOOD IS NOT A SUBSTITUTE FOR
BREAST MILK BUT A COMPLEMENT. A WEANING FOOD IS NOT
INTENDED TO IMMEDIATELY TAKE THE PLACE OF BREASTMILK, BUT
ACT AS AN IMPORTANT NUTRITIVE ADDITION WHEN QUANTITY
AND QUALITY OF MOTHER'S MILK BECOMES INSUFFICIENT TO MEET
THE CHILD'S TOTAL NUTRITIONAL NEEDS. AT TIMES COMMERCIAL
WEANING FOOD COMPANIES USE ADVERTISING TECHNIQUES WHICH
ARE THOUGHT TO HELP CONVINCE MOTHERS TO STOP BREASTFEEDING
AND USE THE MANUFACTURED PRODUCT. THIS PROBLEM IS NOT
UNDER STUDY. USAID CERTAINLY WANTS TO SUPPORT A PROJECT
THAT WOULD PROMOTE THE DEVELOPMENT AND OPTIMUM USE OF A
WEANING FOOD ALONG WITH CONTINUED AND INCREASED BREAST-
FEEDING.

PROPER PREPARATION OF THE WEANING FOOD AT HOME BY THE
MOTHERS WILL ALSO BE CRITICAL TO THE SUCCESSFUL USE OF THE
PRODUCT TO PROMOTE GOOD NUTRITION. PROPER PREPARATION
INCLUDES ADEQUATE QUANTITY OF FOOD PREPARED, (APPROPRIATE
MIX OF THE FOOD WITH LIQUID) FREE FROM BACTERIA AND
PARASITIC CONTAMINATION. MANY STUDIES IN LOGS HAVE
SHOWN THAT OUR TARGET POPULATION, POOR MOTHERS WITH LITTLE
OR NO EDUCATION HAVE NOT GIVEN THE CHILDREN THE ADEQUATE
QUANTITY OF WEANING FOOD PRESCRIBED AND THAT THE FOOD
HAS BEEN CONTAMINATED LEADING TO DIARRHEA AND TO IN-
SUFFICIENT NUTRIENT INTAKE ABSORPTION BY THE CHILD.
ENFORCEMENT OF BASIC HYGIENE AND GOOD NUTRITION PRACTICES
BY THE MOTHERS ALONG WITH EXISTING UNSANITARY CONDITIONS
IN MANY LOGS MAKE PROPER PREPARATION OF A WEANING FOOD
DIFFICULT TO ACHIEVE WITHOUT SOME TYPE OF EDUCATION PROGRAM.

AS A REQUIREMENT, THEREFORE, THAT NUTRITION EDUCATION
PROGRAMS BE INTEGRATED INTO THE SUBJECT PROGRAM. THE
PROBLEM OF THE WEANING FOOD PRESENTS AN
EXCELLENT OPPORTUNITY TO PROVIDE NUTRITION EDUCATION TO
MOTHERS WITH A HIGH RISK OF MALNOURISHED CHILDREN.

1976

MEMO 2248-1284581
TO DIRECTOR
FROM DIRECTOR 2248/2 2311721
INFO USDAO
SUBJECT: AUG 78
RE: SECRETARY WASH-DC
TO: AMEMBASSY GEORGETOWN 3182

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UNCLAS FINAL SECTION OF 2 STATE 212626/2

AIDAC

THE COMMERCIAL PROMOTION OF THE PRODUCT BY THE GPC PROVIDES A SIMILAR OPPORTUNITY.

BS/M CAN PROVIDE TECHNICAL EXPERTISE TO ASSIST WITH THE DESIGN OF THE NUTRITION EDUCATION COMPONENTS, AND ALSO IN THE DEVELOPMENT OF A BUDGET FOR THE IMPLEMENTATION OF THESE ACTIVITIES AS NECESSARY. IT SHOULD BE POSSIBLE TO COMPLEMENT THE PROPOSED MCH AND COMMERCIAL PROMOTIONAL ACTIVITIES WITH LIMITED ADDITIONAL FUNDING FOR NUTRITION EDUCATION (POSSIBLY DOLS 18,223 ADDITIONAL).

ADDITIONALLY, EVALUATION IS MOST IMPORTANT AS THIS IS A PROJECT WITH NEW AND INTERESTING ELEMENTS. WE SUGGEST THAT A WELL-DEFINED NUTRITION IMPACT EVALUATION BE BUILT INTO THE PP'S EVALUATION PLAN. WE ALSO SUGGEST A SURVEY OF PRACTICES IN THE USE OF WEANING FOOD AS A SUPPLEMENT (WHO, WHAT, WHEN, AND HOW) (POSSIBLY DOLS 5,200). THIS EVALUATION WOULD PROBABLY BE BEST SCHEDULED FOR THE 3RD YEAR, ALTHOUGH GATHERING OF BASELINE DATA SHOULD COMMENCE EARLIER. THE EVALUATION SHOULD ALSO LOOK INTO WAYS OF COMPLEMENTING THIS PILOT PROJECT WITH INCREASED MATERNAL NUTRITION IN PHASE II. THE WEANING FOOD, OR A SIMILAR PRODUCT, COULD BE USED TO SUPPLEMENT THE DIET OF PREGNANT AND LACTATING WOMEN SO AS TO ENHANCE THE PROJECT'S NUTRITIONAL IMPACT.

(C) MISSION SHOULD ATTEMPT IF POSSIBLE TO INITIATE A PHASE DOWN OF PL 482 COMMODITIES DURING PILOT STAGE PHASE I AND A PARALLEL INCREASE OF LOCAL COMMODITY COMPONENT.

2. WE NOTE THAT A FORMAL APPLICATION FOR PL 482 COMMODITIES IS REQUIRED FOR THIS PROJECT.

3. WE UNDERSTAND THAT THE MISSION INTENDS TO OBLIGATE FUNDS FOR THIS PROJECT BY AUGUST 31. EXPIRATION OF THE WAITING PERIOD FOR CONGRESSIONAL NOTIFICATION IS AUGUST (28). VANCE

14
2226

RDO

DEPARTMENT OF STATE
 AGENCY FOR INTERNATIONAL DEVELOPMENT
 WASHINGTON, D.C. 20523

LAC/DR-IDE-78-29

ENVIRONMENTAL THRESHOLD DECISION

Location : Guyana
 Project Title : Weaning Foods Development, 504-0073
 Funding : FY '78 \$275,000 Grant, FY '79 \$115,000 Grant,
 FY '80 \$90,000 Grant
 Life of Project: Three Years

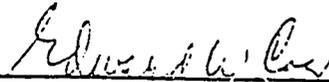
Mission Recommendation:

Based on the Initial Environmental Examination, the Mission has concluded that the project will not have a significant effect on the human environment and therefore recommends a Negative Determination.

The Latin America and the Caribbean Bureau's Development Assistance Executive Committee has reviewed the Initial Environmental Examination for this project and concurs in the Mission's recommendation for a Negative Determination.

AA/LAC Decision:

Pursuant to the authority vested in the Assistant Administrator for Latin America and the Caribbean under Title 22, Part 216.4a, Environmental Procedures, and based upon the above recommendation, I hereby determine that the proposed project is not an action which will have a significant effect on the human environment, and therefore, is not an action for which an Environmental Impact Statement or an Environmental Assessment will be required.



Assistant Administrator for
 Latin America and the Caribbean

August 24, 1978

Date

Clearances:

DAEC Chairman: M. Brown 
 LAC Environmental Advisor: R. Otto 

INITIAL ENVIRONMENT EXAMINATION

Project Location: Guyana

Project Title: Weaning Foods Development

Funding:

FY '78	\$275,000	Grant
FY '79	\$115,000	Grant
FY '80	\$ 90,000	Grant

Life of Project: Three Years.

IEE Prepared By:


Dan F. Miller Jr.
Chief Engineer, USAID/Georgetown
July 21, 1978

Environmental Action Recommended:

Based on the Initial Environmental Examination (See Page 4 of IEE), the Mission has concluded that the project will not have a significant effect on the human environment and recommends a Negative Determination.


Edna A. Boorady
Director

Date: July 24, 1978

Clearances:

RDO: DSteen (in draft)
PRM: NMariani (in draft)

INITIAL ENVIRONMENTAL EXAMINATION (IEE)

Weaning Foods Development
Project No. 504-0073

I. Examination of Nature, Scope and Magnitude of Environmental Impact.

Description of Project:

Purpose: The purpose of this project will be to establish within Guyana the capacity for production and distribution of nutritious weaning foods made from local foods. The activity will be related to programs in both the agricultural and health sectors. Agricultural policy and plans call for improved agriculture production and the increased national production of nutritious food crops; health policy activities encompass preventative medicine including special feeding programs for young children. Attainment of the immediate objective of this project would provide children below five years of age with a nutritious food supplement in order to improve their nutritional status and contribute to the larger sectoral objective of eliminating the protein-calorie malnutrition that exists among pre-school children in Guyana. This project is conceived as a developmental three-year pilot effort to provide an operational feasibility test.

Background: As covered in detail in the project paper, food supplements for preschool children have been distributed to a very limited extent in Guyana. Until recently, small amounts of imported commercial weaning foods were available through retail outlets. However, these products were considered too expensive to be consumed by low-income families and represented a drain on scarce foreign exchange. Accordingly, importation has recently been discontinued. Locally made weaning foods are available in the market, but for the most part these are simply packaged plantain flour and are not adequate from a nutrition standpoint. WFP has supplied limited amounts of wheat flour, cheese, CSM and other commodities for distribution to families of malnourished children through MCH centers. This program has had limited effectiveness because

it reaches only a small proportion of the target group and because the food appears to be consumed largely by the family as a whole rather than by preschoolers. This program is scheduled to terminate in 1979.

In March 1977, the Government of Guyana's Cabinet directed that the Guyana Pharmaceutical Corporation (a Government entity) be responsible for the production and marketing of a weaning food product. The Guyana Pharmaceutical Corporation (GPC) has requested A.I.D. assistance in this undertaking. Such assistance would be consistent with the findings of the A.I.D. Health and Nutrition Assessment Team which visited Guyana in February 1978, to review the situation and advise the USAID on courses of action.

In response to the GPC request, this project as proposed is an integrated approach to solving a priority development problem, using grant project funds together with Title II commodity imports. It will provide for the manufacture and distribution of a food supplement (weaning food) to help alleviate malnutrition among preschool children in Guyana. The food is to be made from ingredients supplied partly by the GOG and partly by grant project funds, but predominantly from PL 480 (Title II) commodities. The food is to be precooked, using low-cost extrusion cookers, and distributed through retail outlets at a price which will permit recovery of manufacturing and distribution costs. In addition, approximately 10-15 percent of the production will be purchased by the GOG and distributed free of charge through MCH centers.

Identification and Evaluation of Environmental Impacts.

(Also see Impact Identification and Evaluation Form attached)

1. General Discussion:

Because the processing and packaging equipment to be furnished under this project will be installed in an existing suitable building owned by the GPC, physical impact upon the environment will be very minimal or none even during the initial phase of installation of the processing and packaging equipment.

When the equipment is active and the facility is in production, the effect on the actual neighborhood environment will still be small and there will be little future increased activity over that of the present.

On the other hand, as covered in the Project Paper, there will be substantial beneficial impacts in the socio-economic/health areas. However, there are no negative impacts in these areas. All impacts are beneficial and positive.

2. Detail Examination and Comments on Items of Impact Identification and Evaluation Form.
(See Attached Form).

A. Land Use

There is little or no impact from the project in this area. As noted, required production of foods will be in an existing physical facility.

B. Water Quality

None.

C. Atmospheric

None.

D. Natural Resources

None.

E. Cultural

None.

F. Socio-economic

There are substantial impacts but these are beneficial.

G. Health

There are substantial impacts on nutrition but these are beneficial.

H. General

None.

Recommendation for Environmental Action

Because the physical impacts are very minimal and the long range socio-economic/health impacts are beneficial, the Mission recommends a Negative Determination of Environmental Impact.

IMPACT IDENTIFICATION AND EVALUATION FORM

Impact Identification
and Evaluation ^{2/}

Impact Areas and Sub-areas^{1/}

A. LAND USE

- | | |
|--|---|
| 1. Changing the character of the land through: | |
| a. Increasing the population _____ | L |
| b. Extracting natural resources _____ | N |
| c. Land clearing _____ | N |
| d. Changing soil character _____ | N |
| 2. Altering natural defenses _____ | N |
| 3. Foreclosing important uses _____ | N |
| 4. Jeopardizing man or his works _____ | N |
| 5. Other factors _____ | |
| _____ | |
| _____ | |

B. WATER QUALITY

- | | |
|---|---|
| 1. Physical state of water _____ | N |
| 2. Chemical and biological states _____ | N |
| 3. Ecological balance _____ | N |
| 4. Other factors _____ | |
| _____ | |
| _____ | |

^{1/} See Explanatory Notes for this form.

^{2/} Use the following symbols: N - No environmental impact
L - Little environmental impact
M - Moderate environmental impact
H - High environmental impact
U - Unknown environmental impact.

IMPACT IDENTIFICATION AND EVALUATION FORM

C. ATMOSPHERIC

- | | |
|--------------------------|---|
| 1. Air additives _____ | N |
| 2. Air pollution _____ | N |
| 3. Noise pollution _____ | L |
| 4. Other factors _____ | |
| _____ | |
| _____ | |

D. NATURAL RESOURCES

- | | |
|--|---|
| 1. Diversion, altered use of water _____ | N |
| 2. Irreversible, inefficient commitments _____ | N |
| 3. Other factors _____ | |
| _____ | |
| _____ | |

E. CULTURAL

- | | |
|--|---|
| 1. Altering physical symbols _____ | N |
| 2. Dilution of cultural traditions _____ | N |
| 3. Other factors _____ | |
| _____ | |
| _____ | |

F. SOCIO-ECONOMIC

- | | |
|--|---|
| 1. Changes in economic/employment patterns _____ | N |
| 2. Changes in population _____ | M |
| 3. Changes in cultural patterns _____ | L |
| 4. Future Productivity _____ | H |
| _____ | |

IMPACT IDENTIFICATION AND EVALUATION FORM

G. HEALTH

- | | | |
|---|-------|-------|
| 1. Changing a natural environment _____ | _____ | N |
| 2. Eliminating an ecosystem element _____ | _____ | N |
| 3. Better health of children and
future adults _____ | _____ | H |
| _____ | _____ | _____ |

H. GENERAL

- | | | |
|---------------------------------|-------|-------|
| 1. International impacts _____ | _____ | N |
| 2. Controversial impacts _____ | _____ | N |
| 3. Larger program impacts _____ | _____ | N |
| 4. Other factors _____ | _____ | _____ |
| _____ | _____ | _____ |

I. OTHER POSSIBLE IMPACTS (not listed above)

- | | | |
|-------|-------|-------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

See attached Discussion of Impacts.

ANNEX 7 TABLE 1.

MANUFACTURING AND DISTRIBUTION COSTS OF WEANING FOOD

Market Year
Annual Production 1/

1	2	3	4	5 and beyond
430MT	570MT	710MT	780MT	850 MT

All Values in U.S. Dollars

Direct Costs

Raw Materials (Unit Price Used)

	1	2	3	4	5 and beyond
	430MT	570MT	710MT	780MT	850 MT
Rice (0.102/lb)	14504	19232	23944	26315	28671
Sugar (0.102/lb)	9670	12821	15964	17545	19116
Corn Meal (0.136/lb)	39968	52996	65981	72516	79009
Soy Flour (0.204/lb)	38678	51285	63851	70175	76458
Soy Oil (0.442/lb)	29331	38891	48421	53217	57981
Milk Powder (0.214/lb)	30431	40350	50237	55212	60156
Vitamins (4.715/lb)	4470	5927	7379	8110	8836
Minerals (0.380/lb)	6845	9076	11300	12419	13531
Packaging (0.060/lb)	<u>56880</u>	<u>75420</u>	<u>93900</u>	<u>103200</u>	<u>112440</u>
Sub Total Raw Materials and packaging	230777	305998	380977	418709	456198
Labor	17952	23798	29642	32662	35488
Utilities	<u>10900</u>	<u>14450</u>	<u>17998</u>	<u>18910</u>	<u>21548</u>
Sub Total Labor and Utilities	28852	38248	47640	51573	57036
Factory Operation Costs					
Salaries	15000	15000	24000	24000	24000
Maintenance	4730	6270	7810	8580	9350
Cartage	1157	1533	1910	2098	2286
Supplies and Misc.	5000	5000	5000	5000	5000
Depreciation	<u>24900</u>	<u>24900</u>	<u>24900</u>	<u>24900</u>	<u>24900</u>
Sub Total Factor Operation	50787	52703	63620	64578	65536

Market Year
Annual Production 1/

1 2 3 4 5 and beyond

430MT 570MT 710MT 780MT 850MT

All Values in U.S. Dollars

Selling and Administration

Advertising and Promotion	20000	20000	20000	20000	20000
Sales	10000	10000	10000	10000	10000
Distribution	5785	7665	9550	10490	11430
Administration	<u>22556</u>	<u>29900</u>	<u>37240</u>	<u>40915</u>	<u>44587</u>
Sub Total Selling and Admin.	58341	67562	76790	81405	86017
Total Production Costs	368757	464511	569027	616265	664787
Contingencies 10%	<u>36876</u>	<u>46451</u>	<u>56903</u>	<u>61626</u>	<u>66479</u>
Sub Total	405633	510962	625930	677891	731266
Management Fee 2.5%	<u>10141</u>	<u>12774</u>	<u>15648</u>	<u>16947</u>	<u>18282</u>
Total	415774	523736	641578	694838	749548

1. Based on attaining the following proportions of projected retail market:
40% - 1st Year, 60% - 2nd Year, 80% - 3rd Year, 90% - 4th Year, and 100%
thereafter; assume 150MT per year procured by GOG for MCH distribution.
See Annex A Table 2.

Table 2

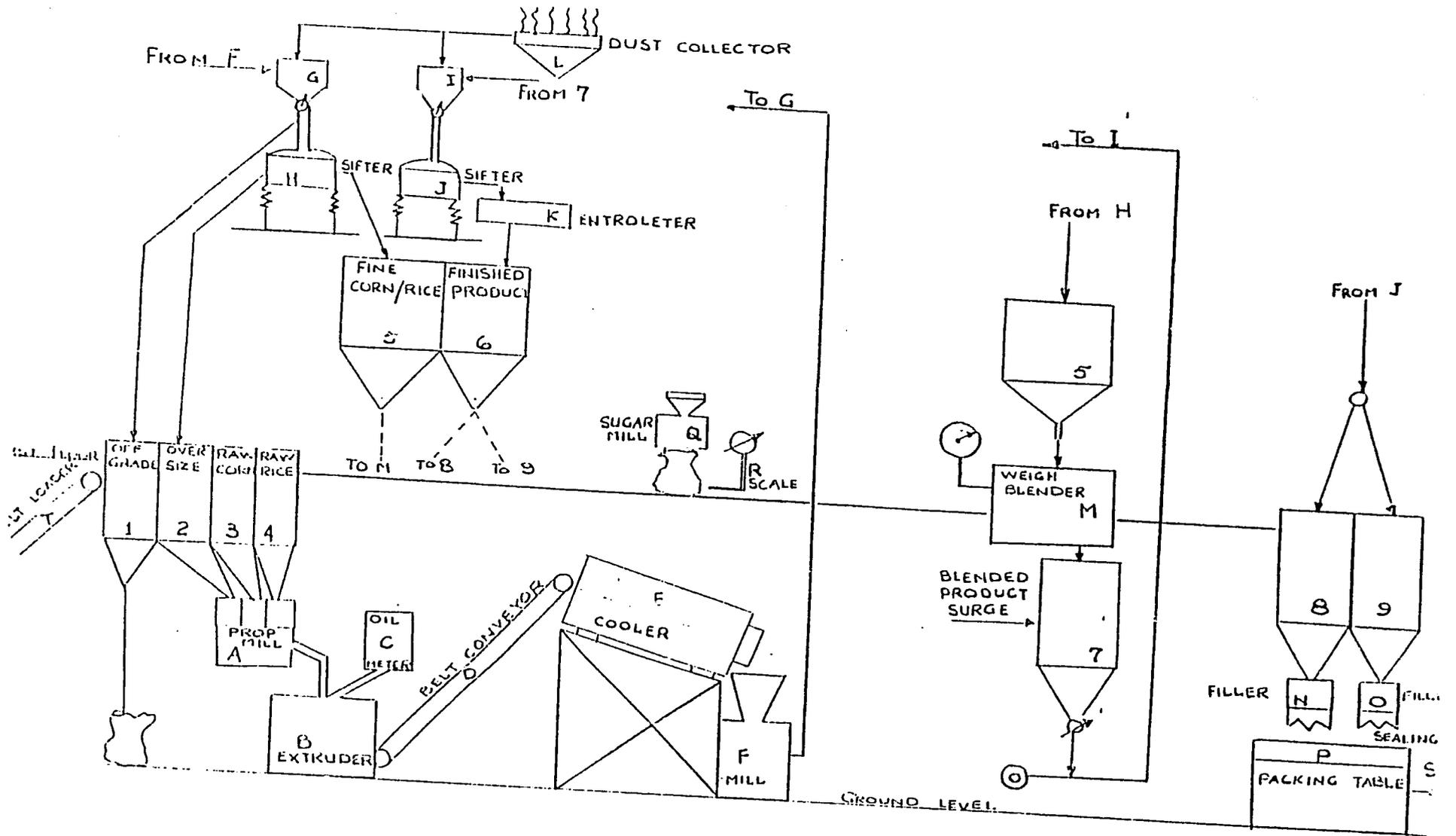
Annex 7Equipment List - Weaning Food Project

A	Proportioning Mill (4 Hopper)	6,500
B	Brady Cooker	7,800
C	Oil System (100gal. tank, 50gph pump, nozzle 200lb/m rotameter)	1,500
D	Belt Conveyor	3,000
E	Cooler with Fan	8,000
F	Hammer Mill	12,000
G	Pneumatic Conveyor (fan, rotary valve, cyclone)	6,000
H	Sifter (2 sieve, vibratory)	5,500
I	Pneumatic conveyor (fan rotary valve, cyclone)	6,800
J	Scalper (1 sieve vibratory)	* 200
K	Entoleter (deinfester)	4,800
L	Tools	500
M	Dust Collector	* 1,000
N	Ribbon Blender with Scale	11,000
O	Package filler (volumetric 8oz - 16ozs)	5,000
P	Package Filler (4oz - 8ozs)	5,000
Q	Packaging table	300
R	Hammer Mill	4,000
S	2-Platform Scales	850
T	2 package Sealers	450
U	2 Scales	200
V	Loader (belt conveyor with cleats for 50-100 bags)	2,200
W	Lab Equipment	750
1	Bin, off grade product 1000	
2	" over size product 1000	
3	" rawcorn meal 1000	*5,750
4	" raw rice 1000	
5	" Ground corn/rice 5000	
6	" Finished product (seived + deinfested) 5000	
7	" Blended product 3000	
8	" Packaging 1000	
9	" " "	
10	Electrical	8,000
11	Installation	*15,000
	TOTAL	US\$ 122,100
	Contingency (10%)	12,210
		<u>134,310</u>
	Shipping 25% (Imported Items Only)	<u>27,665</u>
		161,975

* Indicates Local Currency Expenditure

B/F	161,975
Purchasing Agents Commission 15% of Imported Items	<u>16,525</u>
TOTAL	<u><u>178,500</u></u>

Legend: The letters and numbers correspond to those which appear in the attached schematic of the Weaning Food Factory.



Weaning Food Project - Title II ProposalProject No. 504-0073I. Project Background/Rationale

In 1973, a surveillance system was established by the Ministry of Health in MCH clinics to monitor the nutritional status of children below five years of age attending these clinics. Data developed through this source revealed that for the four year period, 1973-1976, the rate of first degree malnutrition averaged 37.9% among these children, while an additional 15.1% suffered second and third degree malnutrition. An earlier 1971 national nutrition survey revealed that 18.2% of children under five years of age suffered from either second or third degree malnutrition and that 70% of rural and 50% of urban children in this age group had some form of malnutrition.

As a result of the latter survey, a recommendation was made that a low-cost weaning food, based on rice, legumes, plantain flour, and soybean be manufactured in Guyana, with these local foods being supplemented, where necessary, with iron, Vitamin A, thiamine, riboflavin, and niacin to meet internationally accepted levels. This recommendation was adapted in Guyana's food and nutrition policy prepared by the Ministry of Health. In March 1977, the GOG's cabinet directed that the Guyana Pharmaceutical Corporation (a government enterprise) be made responsible for the production and marketing of a weaning food to implement the policy recommendation. USAID was subsequently asked to assist in establishing a weaning food capability in view of Guyana's economic situation which precluded it doing so wholly on its own.

Guyana has experienced severe balance of payments problems over the past two years which are expected to continue over the short term, through 1980, despite imposition by Government of severe import and travel restrictions. A deficit on current account of US\$157.2 million (30% of GDP) was recorded in 1976 and an estimated US\$94.9 million in 1977 (22% of GDP). The World Bank's projected current account deficit for the period 1978-80 totals US\$117 million or about 6.9% of the GDP projected for that time span. To assist in meeting the continuing balance of payments deficit, Guyana recently concluded a Standby Agreement for \$20 million with the IMF.

II. Proposed Pilot Program

The production of weaning food will rise during the three years of the pilot project from an estimated 215 MTs in Year One to 640 MTS in Year Three. The food, provided through Title II, will be blended with sugar and rice (provided by GCG) and will be supplemented by adding vitamins and minerals. The weaning food will be made available at retail food outlets throughout Guyana and about 15 to 20 percent of the output will be distributed free of charge, to MCH clinics. A promotion and nutrition education program will be launched to introduce the weaning food to the public and consumer reaction to its acceptability will be monitored. The information program will stress that the weaning food

is a supplement to breast feeding and not a substitute. Users will also be advised to use only boiled water in diluting the weaning food prior to consumption, to minimize risk of diarrhea or dysentery. By Year Three, after consumer acceptability has been established, production is expected to increase to 640 MTs.

As stated above, Government's interest in the program is backed by the Cabinet's decision to establish a weaning food capability in Guyana and by its stated willingness to subsidize its operation by providing approximately \$500,000 by the end of Phase II.

III. Commodity Need Rationale

It is expected that production of locally produced commodities, (corn and soybeans) to be substituted for Title II inputs, will not have attained a level of production sufficient to meet the demands of the country, including the weaning foods industry, for these commodities during the formative years of production of the particular items which will be used in formulating weaning foods. The production of corn and soy beans in Guyana are still in an incipient stage and through yearly production increase of these commodities are being recorded, it is a gradual advance and demands for these commodities far exceed production.

As the production of the weaning food increases during the three years of this pilot project (and in its subsequent second phase years, 4 to 6) the amount of commodities required for the formulation will, of course, similarly increase. Given these increased commodity requirements associated with production increases, it is not likely that it will be possible to diminish Title II inputs during the three years of this project. Efforts, however, will be made to introduce locally produced corn and soy during the first phase of the project, and it is anticipated both commodities will be available from local supplies during the second phase. The corn input will be from local sources beginning at Phase II, i.e., 4th year. By Year Six of plant operations, local production of soy bean is expected to reach a level where, save for milk powder, importation will no longer be required.

IV. Commodities Required (in 1000 KGS)

	<u>FY78</u>	<u>FY79</u>	<u>FY80</u>
1. Corn Meal	74	172	221
2. Soy flour	43	111	143
3. Milk Powder	36	34	107
4. Vegetable Oil	17	39	50

V. Self-Help Measures

Major self-help measures being undertaken by the Government of Guyana (GOG) in the Food and Nutrition field include (a) reclamation of potentially productive lands through development of irrigation and drainage systems, (b) support of farm-to-market road construction, (c) continuing rehabilitation of sea wall system to prevent tidal flooding of coastal farming areas (such areas being below sea level), (d) continuing support of research efforts to improve rice varieties, (e) activities to improve storage and marketing facilities and (f) continuing support of a MCH program.

The attainment of food self-sufficiency is the major goal of the GOG and an increasing level of resources is being directed to the agricultural sector to achieve this objective. GOG plans call for 33.5% of all public and private investment in the period 1978-81 to be devoted to agricultural sector development, up from a 15.5% level in the previous five year period. GOG self-help efforts in the above Food and Nutrition areas are being complemented and/or assisted by external donor agencies.

VI. Import Data Relating to Commodities (in MT)

	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Corn	7,863	5,822	6,287	8,289	4,482
Soybeans	80	1,096	1,925	5,903	4,290
Veg. Oil (all types)	589	3,410	1,790	2,034	3,192
Milk powder	948	816	515	1,459	865

VII. Currency Proceeds Uses

Currency proceeds from weaning food sales would be absorbed by processing, distribution, and marketing costs. Consumers will not be required to pay for the Title II inputs or the GOG commodity inputs (sugar and rice); these inputs together with vitamin and mineral supplements and packaging materials represent, in effect, a consumer subsidy to make this product available to low-income families. The need to subsidize the weaning food operation is recognized and fully acceptable to the GOG, given the dividend of improved nutrition among pre-school children expected to result as a consequence of the undertaking. After completion of Phase II, the subsidy cost to the GOG is estimated to be \$500,000 per year.

VIII. A summary of proposed food inputs by the U.S. and GOG, and their costs, for both Phase I and II are reflected in the following tables. It should be noted that U.S. corn inputs will terminate after Year 3, and all U.S. inputs, save for milk powder by Year 5.

USG and GOG Food Inputs - Costs

(exclusive of vitamins and minerals and packaging materials)

Inputs (\$1,000)

<u>Commodity</u>	<u>Project Year</u>						
	1	2	3	4	5	6	After
Corn US	22	52	66	0	0	0	0
GOG	0	0	0	77	84	88	88
Soy US	21	50	64	74	41	0	0
GOG	0	0	0	0	40	85	85
Oil US	16	38	49	57	31	0	0
GOG	0	0	0	0	31	64	64
Milk US	17	39	50	58	64	67	0
GOG	0	0	0	0	0	0	67
Sugar US	0	0	0	0	0	0	0
GOG	5	12	16	18	20	21	21
Rice US	0	0	0	0	0	0	0
GOG	8	18	24	27	30	31	31
Total US	76	180	229	189	136	67	0
GOG	13	30	40	122	205	289	356

USG and GOG Food Inputs

(exclusive of vitamins and minerals and packaging materials)

Inputs (1000 kg)

Commodity	Project Year						III After	
	Phase I			Phase II				
	1	2	3	4	5	6		
Corn	US	74	172	221	0	0	0	293
	GOG	0	0	0	257	281	293	
Soy	US	48	111	143	166	91	0	0
	GOG	0	0	0	0	90	189	189
Oil	US	17	39	50	38	32	0	0
	GOG	0	0	0	0	32	66	66
Milk	US	36	84	107	124	136	142	0
	GOG	0	0	0	0	0	0	142
Sugar	US	0	0	0	0	0	0	0
	GOG	24	55	71	83	91	94	94
Rice	US	0	0	0	0	0	0	0
	GOG	<u>36</u>	<u>84</u>	<u>107</u>	<u>124</u>	<u>136</u>	<u>142</u>	<u>142</u>
Total	US	174	406	520	348	259	142	0
	GOG	<u>60</u>	<u>139</u>	<u>178</u>	<u>464</u>	<u>630</u>	<u>784</u>	<u>926</u>

VIII. The project fully meets the intent of PL 480, Section 206, relating to pilot programs to help LLCs develop indigenous nutritional foods (preferably weaning foods) to upgrade the nutritional status of vulnerable population groups, i.e., pre-school children. (See AIDTC Circ. A-617, 11/23/76.)

J.A.H.P. Am 3919 U.S.

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS PART I		1. TRANSACTION CODE <input type="checkbox"/> A ADD <input type="checkbox"/> C CHANGE <input type="checkbox"/> D DELETE	PAF 2. DOCUMENT CODE 5
3. COUNTRY/ENTITY Guyana		4. DOCUMENT REVISION NUMBER <input type="checkbox"/>	
5. PROJECT NUMBER (7 digits) <input type="text" value="504-0073"/>	6. BUREAU/OFFICE A. SYMBOL: LA B. CODE: <input type="text" value="5"/>	7. PROJECT TITLE (Maximum 40 characters) <input type="text" value="WEANING FOOD DEVELOPMENT"/>	
8. PROJECT APPROVAL DECISION ACTION TAKEN <input type="checkbox"/> A APPROVED <input type="checkbox"/> D DISAPPROVED <input type="checkbox"/> DE DEAUTHORIZED		9. EST. PERIOD OF IMPLEMENTATION YRS. <input type="text" value="0"/> <input type="text" value="3"/> QTRS. <input type="text" value=""/>	

10. APPROVED BUDGET AID APPROPRIATED FUNDS (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY 78		H. 2ND FY 79		K. 3RD FY 80	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) FN	322	314		275		135		90	
(2)									
(3)									
(4)									
TOTALS									

A. APPROPRIATION	N. 4TH FY		O. 5TH FY		LIFE OF PROJECT		11. PROJECT FUNDING AUTHORIZED (ENTER APPROPRIATE CODE(S)) 1 = LIFE OF PROJECT 2 = INCREMENTAL LIFE OF PROJECT	A. GRANT	D. LOAN
	C. GRANT	P. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN			
(1)					500			2	
(2)									
(3)									
(4)									
TOTALS								8	0

12. INITIAL PROJECT FUNDING ALLOTMENT REQUESTED (\$000)

A. APPROPRIATION	B. ALLOTMENT REQUEST NO. 2	
	C. GRANT	D. LOAN
(1) FN	275	
(2)		
(3)		
(4)		
TOTALS		

13. FUNDS RESERVED FOR ALLOTMENT

TYPED NAME (Chief, SECRETARY/ASST)

SIGNATURE

DATE

14. SOURCE/ORIGIN OF GOODS AND SERVICES

000 941 LOCAL OTHER

15. FOR AMENDMENTS, NATURE OF CHANGE PROPOSED

FOR PPC/PIAS USE ONLY	16. AUTHORIZING OFFICE SYMBOL	17. ACTION DATE			18. ACTION REFERENCE (Optional)	ACTION REFERENCE DATE		
		MM	DD	YY		MM	DD	YY

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS

PART II

Name of Country: Guyana
Name of Project: Weaning Food Development
Number of Project: 504-0073

Pursuant to Part I, Chapter 1, Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize a grant to the Government of Guyana of not to exceed Two Hundred and Seventy-Five Thousand United States Dollars (US\$275,000) to help in financing certain foreign exchange and local currency costs of goods and services required for the project as described in the following paragraphs:

The project has as its purpose the establishment within Guyana of the capacity for processing and distributing a nutritious weaning food made from locally grown food crops. The total concept of the project embraces a three-phase effort, of which this project would constitute Phase I, to determine the feasibility of developing a weaning food to be initially made from imported Title II food commodities which would be acceptable to consumers. The project, which include a PL 480 Title II component outside this grant, provides for the manufacture and distribution of a food supplement (weaning food) to help alleviate malnutrition among pre-school children. The food is to be pre-cooked, using low-cost extrusion cookers, and distributed predominantly through retail outlets, though a small amount (15 to 20%) will be distributed through maternal/child health clinics. The project is designed as a three-year pilot activity to study the feasibility of this method of providing food supplements to malnourished children and to establish a basis for extending the approach as an on-going nutrition intervention. It includes market testing and an information program for consumers.

If the pilot project is successful, it is planned to substitute locally grown food combinations, over time, on the basis of different product formulations with a view toward developing both a nutritiously rich supplement which is acceptable to the target group (pre-school children) and at a reasonable price.

I approve the total level of A.I.D. appropriated funding planned for this project during its three-year pilot phase of not to exceed Five Hundred Thousand United States Dollars (US\$500,000), all of which is to be grant funded during the period FY 1978 through FY 1980. Accordingly, in addition to the grant funds of up to US\$275,000 which I have authorized above, I approve further increments during that period of grant funding up to \$225,000, subject to the availability of funds, in accordance with A.I.D. allotment procedures.

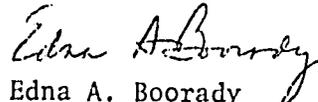
On receipt of the allotment of funds, the Mission will execute the project agreement with the Government of Guyana in accordance with A.I.D. regulations and Delegations of Authority and the following conditions precedent.

Conditions Precedent to any Disbursement:

Prior to any disbursements, or issuance of any commitment documents for equipment under the project agreement, the Government of Guyana shall furnish to A.I.D. in form and substance satisfactory to A.I.D.: (a) a list of required equipment; and (b) a time phased implementation plan for carrying out the Project.

Source and Origin of Goods and Services:

Except for ocean shipping, goods and services financed by A.I.D. under the project shall have their source and origin in the United States (Code 000 of the A.I.D. Geographic Code Book), or in Guyana, except as A.I.D. may otherwise agree in writing.


Edna A. Boorady
Director
USAID/Guyana

September 21, 1978
Revised