

PD-ABJ-631

**Women and Infant Nutrition Field Support Project (WINS)**

**Report of a WINS Technical Assistance  
Visit to Nigeria**

April 12 to June 1, 1993

**SUBMITTED BY:**

**Amy Sampson, Ph.D.  
Tuft University School of Nutrition  
Subcontractor, WINS Project**

Education Development Center, Inc.  
1250 24th Street, N.W., Suite 300  
Washington, DC 20037

**This assignment was supported by the Women and Infant Nutrition Field Support Project (WINS) under U.S.A.I.D. Contract No. DAN-5117-C-00-0015-00 with Education Development Center, Inc.**

## TABLE OF CONTENTS

	<u>Pages</u>
Abbreviations	1
Personnel/Affiliations	1
<b>WINS NIGERIA TRIP REPORT - SUMMARY</b>	<b>3</b>
<b>INTRODUCTION</b>	<b>4</b>
<b>PROJECT ACCOUNTS</b>	<b>4</b>
<b>PROJECT ADMINISTRATION</b>	<b>4</b>
<b>PROJECT STAFFING</b>	<b>5</b>
<b>PRODUCT RELATED ISSUES</b>	<b>5</b>
<b>NUTRITIONAL IMPACT STUDY</b>	<b>6</b>
<b>PRODUCT MARKETING</b>	<b>7</b>

## ABBREVIATIONS

AID	United States Agency for International Development
EDC	Education Development Center, Inc.
FIIRO	Federal Institute of Industrial Research, Oshodi
GON	Government of Nigeria
LUTH	Lagos University Teaching Hospital
NCFN	National Commission on Food and Nutrition
NFDA	Nigerian Food and Drug Administration
Temitope	Temitope Bakery & Catering Services
Tufts	Tufts University School of Nutrition
UNILAG	University of Lagos
WINS	Women and Infant Nutrition Field Support Project

## PERSONNEL/AFFILIATIONS

Aina, Florence, Ph.D.	Private Consultant
Aina, Tade Akin, Ph.D.	University of Lagos
Bello, Kalif	Private Advertising Consultant
Brisibe, Ebi	Nigerian International Bank Limited
Coates, Ellen A., M.P.H.	Tufts University School of Nutrition
Dosumu, Bunmi	US Agency for International Development, Lagos
Essian, Mr.	Temitope Weaning Food Project Marketing Director
Gershoff, Stanley, Ph.D.	Tufts University School of Nutrition
Grange, Nike, M.D.	UNILAG, Lagos University Teaching Hospital

Kupoluyi, Christine	Federal Institute of Industrial Research, Oshodi
Ogunyanwo, Tim	Temitope Bakery & Catering Services, General Manager
Ogunyanwo, Chief	Temitope Bakery & Catering Services, Chairman, Managing Dir.
Salami, Mr.	Temitope Weaning Food Project Sanitation and Quality Control Director
Sampson, Amy, Ph.D.	Tufts University School of Nutrition
Somorin, Oyin	Nigerian Food and Drug Admin., Biochemist, Public Analyst
Soyombo, Lolu, Ph.D.	University of Lagos
Thomas, Rudy	US Agency for International Development, Lagos
Zeitlin, Marian	Tufts University School of Nutrition

## WINS NIGERIA TRIP REPORT -- SUMMARY

This report summarizes a working visit to Lagos, Nigeria made April 12 - June 1, 1993 by Dr. Amy Sampson and Ms. Ellen Coates of the of Tufts University School of Nutrition (subcontractors to EDC and the AID sponsored WINS Project). This trip served as the point of implementation of the WINS Nigerian weaning food project. This visit followed a January 1993 WINS team visit composed of Dean Stanley Gershoff, Dr. Amy Sampson, and Ms. Ellen Coates. While Dr. Sampson's trip was a short term in-country assignment, Ms. Coates was scheduled to remain in Nigeria until the completion of the nutritional study data collection (December, 1993).

Temitope Baking Industries, Ltd. with assistance from WINS team members, has developed and completed production of a low-cost single-serving nutritious weaning food, and has submitted samples of the product to the Nigerian FDA for their formal approval. Dr. Sampson and Ms. Coates working collaboratively with UNILAG and FIIRO personnel and private Nigerian consultants have put in place all administrative requirements necessary to proceed with the project as planned. A nutritional impact study to assess the effect of the weaning food consumption on growth, and consumer product testing has begun. Plans for the market impact evaluation have been outlined. Other administrative issues addressed during April-June, 1993, included the opening of a bank account, the hiring of additional project personnel, the assignment of project responsibilities and resources to project team members, the establishment of a project office, driver and vehicle, the formalizing of a system for project accounting and distribution of project funds, and a schedule for project events. In addition, the WINS team visited the AID Mission in Lagos on numerous occasions and met with Bumni Dosumu to discuss project plans and progress, and address any AID concerns or suggestions.

During April-June, 1993, preliminary data for the nutritional impact study was collected in six potential study communities surrounding Lagos. Two communities, Bariga and Badiya were selected for study and approval for data collection to proceed was granted from the necessary authorities (including local and traditional government bodies and local health center personnel). Data collection instruments have been developed, pretested and printed in both English and Yoruba. Data collectors have been hired and trained and are currently collecting baseline data (demographics, anthropometrics, and health related information) in the study communities. The results of consumer testing conducted independently by Temitope were reviewed by WINS project team members and necessary additional consumer testing is to take place in the greater Lagos area (Mushin market and Akoka Health center) during the week of June 7, 1993. The information collected during this round of consumer testing will be used to confirm and/or supplement the consumer information previously collected by Temitope. Marketing plans have been developed in preparation for the introduction of the new weaning food in select market sites located in the East of Nigeria. Product labels, handbills, and radio spots have been created which contain nutritionally appropriate information.

## INTRODUCTION

Based on the information gathered from previous WINS team visits to Nigeria (10/91, 01/92) it was determined that a low-cost, nutritious weaning food could be made available to low-income mothers in local marketplaces and would be an effective intervention to combat malnutrition among weaning age children in Nigeria. In January, 1993, a WINS project team in collaboration with Temitope management, conducted a positive feasibility analysis of the weaning food venture. During the January, 1993 visit, the WINS Team and members of UNILAG designed a nutritional impact study which would test the hypothesis that the proposed weaning food product will improve infant nutrition in a low-income population. Plans were outlined for the selection of appropriate nutrition study site communities located in the greater Lagos area and for initial test marketing and assessment of the product to take place in the East region of Nigeria, geographically removed from the nutrition study site. In April, 1993 a WINS team composed of Dr. Sampson and Ms. Ellen Coates returned to Nigeria in order to fully implement the project. Prior to Dr. Sampson's departure on June 1, 1993, the nutritional impact study had begun. During the April-May visit, the WINS team assisted Temitope in the design of the weaning food product packaging and in the development of health related materials which would accompany the product. The final single serving product which was developed meets both the nutritional goals of the WINS project and the expectations of the Nigerian FDA. The product in its final form has been submitted to the Nigerian FDA.

## PROJECT ACCOUNTS

Given the inability to establish a bank account during the WINS team January 1993 visit, one of the first orders of business during the April visit was to open a bank account. A dollar in/dollar out savings account was open at the Nigerian International Bank Limited which is an affiliate of Citibank N.A. Ms. Ebi Brisibe of the Nigerian International Bank worked via fax and telephone with Mr. David Hastings in order to make the necessary arrangements. Following the establishment of the bank account, all reimbursable project costs incurred to date were reimbursed. These expenses included personnel costs for work completed since January 1993 as well as budgeted material costs.

## PROJECT ADMINISTRATION

Dr. Tade Akin Aina, the Nigerian Project Director who has been involved with the project since its inception has left his position at UNILAG. Dr. Aina's new position outside of the University will not allow for his ongoing involvement in the weaning food project after mid-May, 1993. Dr. Soyombo, previously employed the Associate Project Director has taken over Dr. Aina's responsibilities as the Nigerian Project Director.

During the April-May visit, the lecturers at UNILAG went on strike which resulted in the shutting down of the University by the federal government. In order for WINS project team members to officially use the proposed project office, vehicle and driver, it became necessary for a formal exchange to take place between the former Project Director Dr. Aina and the UNILAG administration. At the time of Dr. Sampson's departure this transaction had not taken place though negotiations were under way. The UNILAG lecturer strike and subsequent shutting

down of the University has not directly hampered the progress of the WINS weaning food project, however it has somewhat limited the WINS team's access to the current project director (Dr. Soyombo), his office (which contains a working computer printer), and the UNILAG administration.

### PROJECT STAFFING

It was decided that the nutrition study sample should be increased in order to compensate for possible project delays which would shorten the length of time the nutrition data could be collected. In order to collect data on the increased study sample, 4 additional data collectors were hired and 4 additional community workers were identified. A marketing/consumer testing specialist, Dr. Mrs. Florence Aina was hired in place of a community development specialist. Dr. Mrs. Aina has been instrumental in the design and implementation of additional consumer testing and the market performance assessment. The project secretary left her job at UNILAG some time between the WINS team's January and April, 1993 visit. A secretary was scheduled to be hired the first week of June. Mr. Salami, a quality control specialist, and Mr. Essian, a marketing specialist were both hired by Temitope to work exclusively on the weaning food project. These gentlemen met on numerous occasions (at UNILAG and at Temitope) with project team members to collaboratively plan project related activities.

Though unfortunate, it became obvious that Dr. Somorin, the project biochemist hired by the WINS team during the January, 1993 visit, is unable to fulfill his contractual obligations to the project. Though Dr. Somorin's qualifications and his own assessment of his abilities would indicate that his skills far exceed the requirements of the project, his performance to date has indicated otherwise. Dr. Somorin: a) repeatedly made appointments with WINS team members which he did not keep, b) never conducted tests which were outlined in his contract, c) to date has not produced documentation for tests he "thinks he completed", d) has shown an inadequate understanding of nutrition in general, and, e) felt no need though specifically instructed to do so to include the nutrient content of the weaning food in his calculation of the nutrient content of the weaning food (he just took the nutrient breakdown of the vitamin pre-mix provided by the supplier and converted it to a 100 gm serving). Dr. Somorin's actions have resulted in significant project delays. Therefore for the time being, Dr. Somorin's services will not be required by the project pending an in-depth assessment of the project's biochemistry needs. Dr. Stanley Gershoff with information provided by Dr. Sampson and Tim Ogunyanwo, and computer assistance from Sujata Dixit (a Tufts doctoral student) created the final nutritional label to be used on the weaning food package. Dr. Gershoff with input from other project team members will reassess the project's biochemistry needs and oversee all testing which will be conducted on the weaning food for the duration of WINS involvement.

### PRODUCT RELATED ISSUES

The composition and microbiological activity of the proposed weaning food received preliminary approval from the FDA prior to the WINS team return in April, 1993. This preliminary approval allowed Temitope to continue on with product development and consumer testing prior to the return of the WINS team in April. The weaning food composition and

packaging design has undergone numerous changes since Temitope was first approached by the WINS team in October, 1991. The product now in its final form reflects both the independent efforts of Temitope over the past year and one-half, and collaborative efforts involving WINS team members. After the initial October, 1991 WINS visit, and prior to AID project approval and funding, Temitope conducted consumer trials to test out a variety of proposed product formulas, packaging, and health related messages. These trials resulted in the weeding out of unsuitable versions of the product. Factors such as flavor, consistency, color, and smell were addressed during these trials. Packaging issues addressed during consumer trials included the nature and understanding of the weaning food instructions, the associations of specific colors and words (such as nutritious or weaning), and the perceived value of the product in relation to other products on the market. Upon the WINS teams return to Nigeria in April, 1993, Dr. Sampson spent time working with the management team from Temitope creating the final versions of the product packaging (including the single-serving cellophane packs, the cellophane overpacks, cardboard cartons, handbills, and multi-serving canisters). Though not a direct responsibility of the WINS team, it became necessary to spend time assisting Temitope with the design of a multi-serving can which will be marketed in conjunction with the single-serving packets. The decision to assist with the design of the multi-serving can was based on the following: 1) Consumers and vendors expressed the opinion that a weaning food made available only in a single-serving pack would be perceived as inferior as compared to other nutritious weaning foods available in multi-serving cans. Vendors said that a single-serving product to be successful must be perceived as having equal value to other highly nutritious weaning foods which were only available in multi-serving cans. Temitope is therefore tentatively planning to simultaneously market the product in both a single and multi-serving form; 2) Prior to Dr. Sampson's intervention, Temitope had proposed using a non-similar logo, label, and package design on the multi-serving can. To do so would have made the single-serving package look like a different product which could result in lack of consumer trust and/or acceptance; and, 3) The FDA requests that any product seeking formal approval be presented in all the forms that will be marketed (though the project's first priority is to get approval for the single-serving containers which will be distributed in the nutritional impact study).

Advertising and health related messages which will be contained in handbills and posters to be distributed during product market introduction were developed and approved by team members. Dr. Nike Grange, the WINS weaning food Nigerian project physician reviewed all packaging and health related materials and strongly urged Temitope to change the age range on the product label so that the product would be recommended for children from the age of six months rather than from four months on (as initially proposed). Temitope changed the packaging to reflect this request. Prior to submittal of the product in its final form to the Nigerian FDA, additional consumer testing trials are scheduled to take place under the supervision of the WINS team. The product has been sent to Abeokuta in the Ogun state for FDA approval. Following Ogun state approval, the product will proceed to Lagos for final FDA approval.

#### NUTRITIONAL IMPACT STUDY

Given, a) the potential for study delays, and, b) the scheduled project data collection end date of December, 1993, it was decided that it would be prudent to increase the final study

sample size. By increasing the study sample size, the likelihood of observing effects (if they exist) increases. Necessary changes in study plans were made to incorporate the larger study sample size. These included the hiring of additional data collectors and community workers. The final study sample is estimated to contain approximately 120 children in each of the two study groups (experimental and control). Study survey instruments were completed, pretested, and translated into Yoruba. Additional weighing and measuring equipment were procured. Data collector rain gear was purchased. For ease in child handling and weighing, we had chosen to purchase weighing cradles without leg holes. However, during anthropometric training it became apparent that the cradles without the leg holes would not securely hold larger size weaning age children. The Psalter scale cradles were therefore modified so to accommodate a wider age range of children.

Recruitment of data collectors took place in and around the UNILAG campus. After interviews with project team members, eight data collectors were recruited, interviewed, and hired. All eight women selected are college educated, bilingual, have experience working with children, and fully understand the requirements of research data collection. All data collectors attended training sessions on interview techniques, survey methodology, and anthropometric data collection methods.

Six potential low-income communities in and surrounding Lagos were visited. Enumeration of these six communities allowed the data collection team to estimate the number of potential study subjects in each community, and to assess other factors which could impact the data collection efforts. These other factors examined included the willingness of the local and traditional governments to allow the data collection team entry into their communities, the accessibility of the communities with regards to the rains and traffic patterns, and, the demographic similarities and differences among potential study subjects in the communities. Two of the six potential communities were chosen for inclusion in the study. Bariga (experimental group) and Badiya (control group) were the two communities selected. Local and traditional government officials were contacted and gave their approval for data collection to proceed. Community workers from the two study communities were recruited and interviewed. Their training began on June 6.

Additional protocols were developed for the identification and removal of children deemed "technical knock-outs" from the study sample, paying of all data collection personnel, distribution of the weaning food to study participants, monitoring of product consumption by experimental study children and, distribution of incentives to all study participants.

## PRODUCT MARKETING

After reviewing Temitope's reports which summarized the results of their consumer testing trials, the WINS project team members decided that it would be necessary to conduct additional consumer trials using a more scientific approach. Additional consumer testing is to take place in the greater Lagos area (Mushin market and Akoka Health center) during the week of June 7, 1993. The information collected during this round of consumer testing will be used to confirm and/or supplement the consumer information previously collected by Temitope.

The first priority when designing the test marketing of the new weaning food was to assure that the market introduction of the product would take place in an area of Nigeria geographically isolated from the nutritional impact study. It was therefore decided that the product will be test marketed in the Eastern region of Nigeria. On numerous occasions in May, Temitope management and WINS project team members met to discuss plans for product distribution and the assessment of the test marketing. It was decided that beginning in June, 1993, Mr. Essian from Temitope would work closely with Dr. Soyombo and Dr. Mrs. Aina from the WINS project team in order to finalize the design for the product distribution and the baseline market data collection. Temitope has established vendors and depots in the East which currently distribute Temitope products. These distribution centers will serve as focal points for data collection and product distribution monitoring. A schedule for the recruitment, interviewing, and hiring of new weaning food sales vendors was developed. Temitope's established distributors will work closely with Mr. Essian, the WINS team members, and the newly hired weaning food vendors in order to collect market data. While Mr. Essian will make frequent trips to the East to collect information from the distributors and oversee market data collection and product distribution, Dr. Soyombo and Dr. Mrs. Aina will visit the test market sites when the project team deems it necessary (e.g. during intensive data collection periods).

Since January, 1993, Temitope has invested resources in order to develop and put in place sanitation and quality control measures appropriate for the production of a weaning food. These measures included: moving machinery in order to minimize the amount of time that the product is exposed to open air, purchasing new sealing machines, building a mixing area, and constructing a separate room to be used exclusively to package and store the weaning food. The new weaning food quality control specialist hired by Temitope (Mr. Salami) will work with the WINS team members (primarily Dr. Mrs. Aina and Dr. Soyombo) providing them with information and unlimited access to the new weaning food product line. During May, 1993, an outline of quality control measures and sanitation requirements were determined and tentative schedules and protocols for monitoring were determined. Temitope has agreed to allow WINS team members unlimited and unannounced access to the weaning food production line so that they may document the predetermined sanitation quality control measures. Temitope has made plans to hold in-house sanitation and quality control seminars for all personnel. These training sessions will cover general sanitation topics as well as the specific sanitation requirements of weaning food production.