PD-AAN-616
ISN: 32778

931-1010/53

INFANT FEEDING STUDY

AID/DSAN-C-0211

Fourth Interim Progress Report

July 1982 - June 1983

Submitted by:

The Population Council

Columbia University

Cornell University

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I. INTRODUCTION

In September 1979, The Population Council, in conjunction with Columbia University and Cornell University (referred to, in this report, as the Consortium), was awarded a contract by AID to undertake a collaborative study with institutions in four developing countries. The contract scope of work called for an investigation of the impact of a broad range of biological, social, cultural and economic factors on infant feeding practices in order to determine the nature and magnitude of their contribution to problems of infant nutrition.

The central objective of the study is to investigate the significance of these variables, including the role of the health professions, infant food marketing and distribution strategies, and women's labor force participation. An interdisciplinary research approach has been utilized in order to identify a variety of potential influences on infant feeding decisions and choices.

This approach includes 3 study components: 1) ethnographic field work, consisting of participant observation of infant feeding practices in the home and community context; 2) a cross-sectional household survey of mothers of infants under one year of age (18 months in Nairobi, 24 months in Semarang) which includes infant feeding practices and consumer behavior relating to infant foods, 3) a market study, on a national basis, of the infant feeding market, including the analysis of the development and state of the industry and the structure of the market. The research has been guided by the conceptual framework developed by staff and consultants in early 1981.*

* The conceptual framework was endorsed by AID's Project Review Panel in April 1981 and has been distributed as a Population Council International Programs Working Paper. No. 15, Laukaran Virginia, et al. "Research on Determinants of Infant Feeding Practices: A Conceptual Framework," November 1981.

The Consortium Project Team

The following Consortium staff members have contributed to the design, collection and analysis of data.

Beverly Winikoff, Co-Principal Investigator, M.D., M.P.H. (Population Council)

Giorgio Solimano, Co-Principal Investigator, M.D. (Columbia University)

Michael C. Latham, Co-Principal Investigator, M.D., D.T.M.H. (Cornell University)

Virginia Hight Laukaran, Epidemiologist, Dr. P.H. (Population Council)

Penny Van Esterik, Anthropologist, Ph.D. (Cornell University)

James E. Post, Marketing/Management Policy, Ph.D. (Boston University)

Irving Sivin, Biostatistician, M.A. (Population Council)

Robert A. Smith, Sociologist/Data Analyst, M.A. (Boston University)

All administrative aspects of the project have been managed by the Project Coordinator, Ms. Joanne Spicehandler.

Collaborating Institutions

The study has been conducted in collaboration with research teams at the following institutions:

- Javeriana University, Bogota, Colombia;
- Mahidol University, Bangkok, Thailand;
- Diponegoro University, Semarang, Indonesia;
- Central Bureau of Statistics (CBS) and African Medical and Research Foundation (AMREF), Nairobi, Kenya.

Trost Associates, Inc., a market research firm in Norwalk, Connecticut, has been responsible for coordinating the marketing study with overseas subcontractors in each participant country.

II. OVERVIEW OF STUDY PROGRESS

During the latter part of 1982, the Consortium focussed on gathering all data collected from each study component into a form that would facilitate analysis within countries and comparatively across countries. Activities included preparing, cleaning and editing data tapes; correcting codebooks, completing and, in some cases preparing first drafts of ethnography phase 1 reports; beginning drafts of phase 2 ethnography reports in some countries; and preparing data for marketing analysis.

It is important to note that large amounts of staff time were devoted to reviewing and revising reports and corresponding or meeting with collaborating research team members. The technical assistance time required to review in detail and comment upon the quantity of material received is in itself a large professional task. In addition substantial staff time was necessary to correct and recode data tapes and prepare a fifth tape and codebook for comparative analysis. Most Consortium staff had limited time allocations to the project in the range of 20-40%. Only three staff members were funded for 50% or more of their time during the first 3 years of the project and those time allocations dropped considerably after 1983 as AID funds became depleted.

The major difficulty impeding study progress in the latter part of 1982 was the delay in submission of required reports and materials by the collaborating institutions in each country. As can be seen in Appendix C, Status of Reports on Infant Feeding Study Findings, most items listed did not reach the Consortium before December 1982. Some of the documents that arrived before then, such as the Colombian reports, were received in Spanish, without English translations. Data tapes were not received from any study country

before October, although data processing in each country had begun during the first half of 1982.

The Consortium took two major steps in an effort to obtain documents and materials from the field sites well in advance of the next meeting called by AID to review the study, scheduled for February 1983.

The first step involved the convening of a series of working meetings in November, 1982 to which principal investigators from each country, or their designates, were invited. The intended purpose of the meetings, when planning began in the first half of 1982, was to work with country research team staff on analysis as well as to begin the cross-national comparison of data. In August, the Consortium wrote to each country team principal investigator, emphasizing the need to have codebooks, data tapes and preliminary study results by end September if the stated objectives of the November meetings were to be accomplished. Most of the required materials, however, arrived too close to the scheduled meeting dates to allow Consortium staff to do more than provide technical assistance on preliminary report development and begin the lengthy and laborious process of checking tapes and codebooks. More detailed information on the November meetings is provided further on in this report.

The second step involved site visits, in particular to Thailand and Indonesia, to ensure delivery of materials by providing on-site technical assistance.

Prior to these site visits, the Consortium expressed to AID the need to consider a no-cost extension of the project to July 31, 1983, extending the existing termination date by seven months. The Consortium informed the Office of Nutrition in September, 1982 that delays with in-country activities would make it impossible to complete analysis and reports by the December 31 con-

tract deadline. AID encouraged the Consortium to submit a request for a no-cost extension and an amendment to the Consortium's contract was processed by the AID Contracting Office in February, 1983 in response to the Population Council's request of December 6, 1982.

During the first half of 1983 the Consortium focussed its attention on preparations for workshops on study findings in Bogota (March 21-24) and Nairobi (April 12-15), and two meetings called by AID to review the study (one on February 17-18 and the next on June 27). Further information on meeting preparations, workshop activities and recommendations can be found in a later section of this report, "Meetings and Workshops."

Progress by study component is described in the following sections.

III. CROSS-SECTIONAL SURVEY

During the period August to October 1982, Consortium efforts in the survey area were concentrated on technical assistance for data analysis of country reports and on final preparations for comparative analysis. Several site visits were made to provide technical assistance for the preparation of country reports.

In September and October of 1982, Mr. Robert A. Smith, the Consortium's consultant, visited Thailand and Indonesia to assist with the preparation of survey data and the completion of tables specified in the Consortium's data analysis guidelines (forwarded as part of the Consortium's third interim progress report). Dr. Beverly Winikoff joined Mr. Smith in Thailand in early October to provide technical assistance and to participate in planning for the workshop. Dr. Giorgio Solimano met Mr. Smith in Indonesia in October to work with him on providing technical assistance for data analysis and to discuss workshop planning with the Indonesian research team.

During August and September, Dr. Virginia Hight Laukaran and Mr. Smith worked on final preparations for comparative analysis including the preparation of a structural format for combined data analysis and a variable by variable analysis of the four questionnaires in order to allow standardization of the data sets. The four data tapes were received during October and November 1983 and Dr. Laukaran, Mr. Smith and Mr. Sendek, the Population Council Computer Specialist, began to develop a standardized data set based on the four tapes.

From November1-21, 1982, the four principal analysts from each site were in New York for a series of working sessions to provide guidance and further

technical assistance for the preparation of country reports. In addition, the Consortium was able to review with the visiting researchers their perspectives on the comparative analysis. All Consortium staff participated in these meetings. Some of the working sessions were directed at increasing understanding of the data sets and data collection procedures on the part of New York based investigators and staff as a basis for sound interpretation of the data. Other sessions were designed to provide technical assistance to the overseas analysts, drawing on specialists from the three study areas: ethnography, marketing, and epidemiology. These sessions emphasized an integrated approach to the data analysis.

From December 1982 to March 1983, staff efforts were directed to the preparation of the data for comparative analysis, and standarization of variables.

The data sets from the four countries were independently coded and three of four were approximately 1,000 columns per record. To prepare a standardized data set, a substantial amount of recoding was required creating a uniform data set of less than one hundred variables. A key step was the preparation of dependent variables to permit further analysis. Each questionnaire included a detailed module on infant feeding practices which included both current and retrospective data. These data were used to compute seven feeding patterns (e.g. breast, breast and bottle, breast and bottle and foods, etc.) which have been used in the descriptive analysis of feeding patterns. Also included in each questionnaire were retrospective data on age of child at first use of breastmilk substitutes, first use of food supplements, and last breastfeeding. Retrospective data were combined with current data to compute a set of variables to define each child as breastfed at least 3 months, at

least 6 months, at least 9 months, and at least 12 months. For example, if a child was 6 months old, and not currently breastfed, and last breastfed at 4 months of age, the case would be coded BF3MO=1 (yes), BF6MO=0 (no) and BF9MO=missing.

A similar set of variables was computed for exclusive breastfeeding (without supplementary foods or bottles). This variable proved not to be useful because the early introduction of supplementary foods was highly prevalent in all sites. Each questionnaire also included a 24 hour food frequency recall permitting some very interesting analyses both of supplementary food use and of the problems of retrospective recall.

Although the pattern of supplementary food use was uniformly early, the pattern of use of breast milk substitutes was more variable and was normally distributed. For this reason, a variable was created combining current and retrospective data on time of introduction of breastmilk substitutes. Thus, each case was classified as having received or not received breastmilk substitutes by 1, 2, and 3 months of age.

During January and February, preparations for the February 17, 1983 meeting of the AID review panel were undertaken. A preliminary comparative analysis was performed including descriptive material on infant feeding practices and some illustrative analysis on the influence of infant feeding practices on child health. Because the meeting was scheduled so soon after the completion of data cleaning, the intention of this presentation was to illustrate the nature of the four samples and the capabilities of the data.

In response to this Panel Meeting, AID requested that the Consortium focus on a more detailed analysis of the Health Sector data in preparation for a June Site Visit. This analysis was to be an illustrative exploration of one

aspect of the study. The Consortium was asked not to proceed with other aspects of the analysis but rather to pursue this particular area in order to provide a basis for supplementary funding which would permit further analysis.

The health sector analysis, conducted from March thru June 1983 involved all Consortium investigators, consultants and staff. Difficulties were encountered in preparations for the site visit because of previous travel commitments (Dr. Winikoff was out of town for 2 weeks and Dr. Laukaran was out of the country for 3 weeks during May and June.) At the same time, Dr. Fatimah was in New York for 10 days in April and staff time was required for technical assistance. During these months, staff time allotments were cut by one-third due to budget considerations.

Frequencies were first examined to determine which items could be used as indicators of health facility policies. Variables were created to permit the analysis of various policies which have been imputed to have an effect on infant feeding. Analysis was focused on separation of the mother and infant in the hospital and distribution of infant formula samples to mothers because of what had been learned in the ethnography and marketing substudies. Although all of the questionnaires included items on advice given by health professionals, these were not included as independent variables because of the problem of inaccuracies of recall and inability to validate the maternal responses (e.g. mothers who go on to breastfeed are more likely to recount favorable advice).

After examination of several items relating to contact between mother and baby in the hospital, a variable was created which classified mothers into 3 categories, depending on whether the baby was rooming-in with the mother, was

not rooming-in but was brought to the mother for feeding, or was not rooming-in and not brought for feeding. Another variable was created based on whether the woman was given a sample of infant formula in the hospital.

Beginning with frequencies and cross-tabulations, the relationships of these health service policy variables to infant feeding practices was explored, taking into account background variables (e.g. family income, mother's education, birth order, rural or urban origin and mother's employment). Multiple classification analysis was used to investigate the relationship of receipt of formula samples and contact between mother and baby to infant feeding practices. The results of these analyses were presented at the June 27, 1983 Site Visit.

IV. ETHNOGRAPHIC RESEARCH

Most of the ethnographic reports from the four countries were received within the period covered by this progress report. Not all reports were received in English, although most are now available in draft translation.

In Colombia, the phase one and two ethnography were submitted as one combined study. A draft report was submitted in Spanish in the summer of 1982 and a portion of this report was available in translation when Lic. Maria Eugenia Romero arrived in the U.S. in October, 1982 to spend one week working with Dr. Penny Van Esterik at Cornell University. Based on their discussions, Lic. Romero revised and resubmitted her report, which arrived in Spanish at the end of December, 1982. Unfortunately, it has not been possible to arrange for translation of this lengthy, three-volume report. Results of the ethnography, however, have been incorporated into the seven topic papers of the Colombian draft final report, most of which are available in draft translation (See Appendix C for list of papers).

By September, 1982, a report on the phase one ethnography conducted in Indonesia was received in Indonesian with some English taped translations and some handwritten notes. A complete English translation of approximately 300 pages in length was finished by the time Dr. Hariyono Suyitno arrived from Semarang to participate in the February, 1983 AID Panel Meeting. Dr. Hariyono returned to Semarang with the translation and a few minor changes were submitted recently by the Diponegoro University (UNDIP) Research team.

Phase two reports were delivered to the Consortium in Indonesian by Dr. Hariyono in February. Rough english translations were prepared by the Indonesian team and completed by Dr. Fatimah Moeis during her trip to the U.S.

in April, 1983. Typed versions of the two phase 2 reports -- one on health centers, and another on the role of retailers -- were available in May and submitted to the UNDIP research team for review and correction.

A report on the Kenyan phase one ethnography was received in October 1982. A draft of the phase two report was also available and was reviewed by Dr. Van Esterik during her site visit to Nairobi in October. The October site visit allowed Dr. Van Esterik to work with staff of the African Medical and Research Foundation (AMREF) on completion of the phase one report and to assist with analysis of the phase two ethnography. In addition, she undertook direct observations and interviews in Nairobi hospitals and clinics to prepare institutional profiles for the medical infrastructure study. The information obtained for these profiles has been used to complement the phase two ethnography.

The phase two report was completed in early 1983 and the findings were presented at the policy workshop held in Nyeri, Kenya, in April 1983. Dr. Van Esterik attended the workshop and assisted with presentation of the Kenyan study findings.

The Thailand report on the phase one ethnography was received in English, revised, and printed by Mahidol University. A draft outline of the phase two report was delivered by Dr. Somchai in February, 1983, at the time of the AID Panel meeting. The completed draft report did not arrive, however, within the period covered by this progress report.

During the course of the research, the ethnographic teams contributed to the overall research goals of the project long before they produced their formal reports. Their contributions to survey construction and hypothesis revision were sometimes made formally through workshops or meetings, and other

times informally communicated through the daily interaction of team members. The teams in Kenya and Colombia have begun using the ethnographic reports to illustrate and explain survey results. This will continue in the production of topic papers which utilize evidence from all study components. The teams in Thailand and Indonesia will require more assistance from the Consortium in integrating the components. Much of this work needs to be done by Consortium staff.

Several steps have been taken to facilitate the Consortium's task of integrating the ethnographies with other study components to prepare each country report. Each ethnographic report was "annotated" using Dr. Van Esterik's field observations and secondary literature review. Files were developed on language use and semantic problems for each of the languages in which the study was conducted. An inventory of case studies was developed to identify cases in each country that can be used to illustrate or explain infant feeding decisions.

Analysis of each topic covered in the ethnography by the variables used in the cross sectional survey is continuing at this time. Thus far, ethnographic materials have been used to assist in the development of the health services model, to identify contextual variables which might clarify analysis of the health services model, to suggest explanations for the statistical results from the survey, and to prepare background papers on the cultural context of health care and health care institutions.

V. MARKETING RESEARCH

Five research questions guided the collection and analysis of marketing data:

1. What current practices and strategies characterize infant food marketing?
2. What factors account, in whole or in part, for the current marketing environment?
3. What is the intensity of the current promotional activity to mothers, health care workers, and others who influence infant feeding choices?
4. What effects, if any, do marketing practices and policies have on the infant feeding behavior of mothers?
5. What effects, if any, do marketing practices and policies have on health care providers' attitudes and behavior?

Several data collection techniques were used: retail audits of stores and shops; interviews with retailers, industry executives, government officials, and health care providers to produce an overview of the state of the infant foods industry in each field site; and interviews with mothers to explore consumer behavior.

Raw data gathered from the retail audits, state of the industry and government studies, arrived at a slow but steady pace throughout the period covered by this progress report. Among the major difficulties encountered was a continued lack of a clear and regular interaction between marketing staff in the countries and other members of the research teams. In Thailand and Indonesia, marketing researchers at Mahidol University and Diponegoro Univer-

sity continued to function almost completely independently of the survey research teams despite reminders from the Consortium to work closely with those principal investigators. There was also an apparent lack of communication between the market research firms engaged in each country to conduct specific aspects of the marketing study and the respective in-country institutions responsible for the overall study. As a result, in each country a number of independent reports have been prepared by subcontractors. The Consortium will, therefore, have to take the major role in integrating and incorporating marketing findings into each country report.

Trost Associates contract responsibilities have drawn to a close. Analysis of marketing data was delayed by the late submission of data to Trost Associates, Inc. (TAI) from its subcontractors. Some administrative problems between TAI and its subcontractors contributed further to the delay. Nonetheless, all data were in hand by the end of June, 1983, and work is proceeding with analysis. With the expiration of the TAI contract, data analysis will continue under Prof. James E. Post's direction.

Retail Audit

Retail audit data have been collected in each field site and preliminary reports have been prepared by the respective subcontractors on product availability, pricing patterns, and penetration in the community. Data from three sites are on computer tapes and can be compared directly; data from Semarang, Indonesia are not on tape but can be compared in a qualitative way. An overview and preliminary tables were prepared by TAI for the Colombia, Kenya, and Thailand retail audit data. The TAI material, however, does not fully cover the large amount of data collected. Extensive analysis remains to be done.

State of the Industry

"State of the industry" reports of a descriptive nature have been assembled for each field site. More detailed analysis of each country is required, with particular focus on the impact of government policies on marketing behavior. A preliminary comparative analysis has indicated a number of significant differences among the four sites. Further comparative analysis of the data is required to refine this analysis, followed by integration with cross sectional survey results, and development of policy alternatives.

As mentioned above, data were submitted by the field sites and, in turn, Trost documents were submitted to the Consortium, at an extremely slow rate. The Colombian documents were available to TAI in early 1982. Lic. Adela Morales de Look traveled to the U.S. in December 1981 to assist TAI with translation and synthesis of material. Because of internal administrative difficulties, TAI staff were unable to forward Lic. de Look summaries of her material for review until mid-1982. Further, in-depth analysis of the raw material should be able to provide more insight into the state of marketing in Colombia and discussion of policy alternatives.

In Indonesia, Dr. Sahid's report on the health infrastructure, state of the industry and retail audit in Semarang was reviewed with Prof. James Post during his June, 1982 site visit (see third interim progress report). Revisions were completed and a draft report, edited by Prof. Post, was available by December, 1982. In-Search, Inc., a market research firm in Jakarta, was contracted to perform the industry and government studies, and the retail audit in Jakarta and other cities. Their reports did not arrive until December, 1982. Trost's overview and preliminary tables based on the In-Search documents were submitted to the Consortium by early February, 1983.

The Kenyan marketing component documents prepared by the Central Bureau of Statistics (CBS) for the government study and by Research Bureau, Ltd., (RBL) for the state of the industry and retail audit were submitted to the Consortium in 1982. The TAI overview of RBL's material was not completed until December.

Deemar, Inc., completed data collection in Thailand in late 1982. At the time of Dr. Beverly Winikoff's site visit in October, 1982, Deemar staff claimed that their contract did not include translation of instruments or interviews with 40 retailers and 11 industry representatives. The Consortium pointed out that their contract did indeed require submission of materials in English. Translations and coding information were then delivered in November. Missing shop code information delayed TAI's retail audit analysis which was completed by June, 1983.

Health Infrastructure Study

The Colombian report on the health sector study is included as one of the seven topic papers in the Colombian final report on research findings. It was submitted in Spanish and is the last of the series of papers to be translated.

The Kenyan data from the health infrastructure study was integrated into the final report on Kenyan study findings. This final report will be forwarded to AID shortly.

The Indonesian health services data has been included as a chapter of the report on research findings. An incomplete draft of the overall report has been submitted to date. With follow-up assistance from USAID/Jakarta we have been assured that the remaining chapters are forthcoming.

The Consortium has experienced considerable difficulty obtaining reports from the marketing subcontractor in Thailand responsible for the health infrastructure study, (Dr. Thonglaw Dejthai of Mahidol University). Dr. Thonglaw's draft report on the health services study was not submitted to the Consortium until Dr. Somchai's February, 1983 visit to New York, despite repeated Consortium requests. In February, and again in June 1983, Prof. Post reviewed necessary changes and additions to the draft report with Dr. Somchai. Dr. Thonglaw's revised report was not submitted until August, 1983.

Consumer Behavior

Consumer behavior data from the four cross sectional surveys have been examined in a preliminary manner. The next phase of the research will involve a systematic analysis of these data on both a national and comparative basis to better understand the effect of marketing practices on consumers and the manner in which consumer decisions are made to purchase and use commercial infant foods. We have already determined that data on maternal attitudes and knowledge, sources of product awareness, and media message recall have potential value in the design of any communications programs dealing with infant feeding. In this area, we are sure, there are important policy implications to be derived from further data analysis.

VI. MEETINGS AND WORKSHOPS

Three major meetings were held within the period covered by this report. Meetings with country research teams were conducted during the entire month of November, 1982. These were organized by the Consortium with additional funding from AID/W for participants' travel. A meeting of AID's Project Review Panel was held on February 17-18, 1983, and a site visit review of the project was scheduled for June 27, 1983, at AID's request.

November, 1982 Meeting

As mentioned in previous sections of this report, the Consortium held working meetings with research team staff during November, 1982. The Consortium began its communications with the country teams to organize these meetings as early as June, 1982. At that time, the country team principal investigators were informed that the intended purpose of the November meetings was to work on the cross-national comparison of data with the understanding that data tapes and preliminary draft reports on study findings would be available to the Consortium by September. In mid-August, the Consortium became concerned about the delivery of these materials and wrote to each country principal investigator, stressing the need to receive data tapes, English codebooks and preliminary study results by end September. During site visits to Indonesia and Thailand in the fall of 1982, Consortium staff attempted to expedite the forwarding of these materials by working with country teams on their preparation. The earliest tapes arrived in mid-October with returning site visitors and others came later in the month. Codebooks arrived at the same time or were delivered in November by meeting participants.

The following research team members represented their institutions at the November meetings:

Dr. Budioro Brotosaputro and Dr. Fatimah Moeis, Diponegoro University

Dr. Somchai Durongdej, Mahidol University

Lic. Belen Samper de Paredes, Javeriana University

Mr. Terry Elliott, technical advisor to the Kenyan study based at the Central Bureau of Statistics

Dr. John Kekovole, principal investigator, Central Bureau of Statistics, was invited but unable to attend due to graduate studies in the U.S. begun in the fall semester.

Most participants were able to spend 2-3 weeks working with Consortium staff in New York City or Ithaca. Consortium staff developed work schedules with each team representative aimed at meeting the specific research needs of each country. Technical assistance was provided for preparation of research reports and meeting participants agreed to work on these reports and forward them to the Council as soon as possible after their return to their countries. Appendix C, however, documents when these reports were in fact received.

February, 1983 AID Review Panel Meeting

In February, 1983, AID held the next meeting of its Project Review Panel at the Council's offices in New York. The Office of Nutrition had anticipated, as of early 1982, that a draft of the first complete, integrated report on study findings from one participant country would be available for review. As a result of the Consortium's November meetings with collaborating institution staff, however, it became clear that this objective would have to be revised to reflect the delayed status of in-country work. The Consortium

advised the AID Office of Nutrition in November, 1982 that it could not predict whether documents would be received in time for advance distribution to panel members.

In preparation for the February meeting of AID's Project Review Panel, the Consortium prepared summary overviews of major findings to date from the ethnography and marketing studies in Indonesia and Thailand and presented preliminary descriptive data on the sample, on feeding patterns and on morbidity data.

By late December it became clear that reports from the two countries scheduled to participate in the meeting, Thailand and Indonesia, had not arrived and would most probably arrive with the participants from those countries (Dr. Somchai, Thailand, and Dr. Hariyono, Indonesia) in February. The Consortium began discussions with AID to revise the agenda. AID, under the circumstances, agreed to change the agenda to a discussion of overview presentations on the Thailand and Indonesian studies (to be made by Dr. Somchai and Dr. Hariyono on the first morning of the meetings) and synopses of the major themes of the ethnography, marketing, and survey, including a discussion of integration of study findings.

June 27, 1983 AID Site Visit to the Population Council

At the February Panel meeting, Consortium staff voiced concern about constraints on completion of the work due to unavoidable delays in study progress and diminishing contract funds. AID/W decided that another meeting should be called within the next 2-3 months at which the Consortium would demonstrate its analytic capabilities by undertaking a complete analysis of one study hypothesis. That meeting, called for June 27, 1983, was also to be the basis

for AID's decision on future support to the study. In preparation for the June meeting, the Consortium spent the period between March and June focussing attention on preparation of a case study analyzing the health sector and infant feeding practices in Thailand.

Workshops

Workshops on study findings have been held thus far in two study sites. A 4-day seminar took place at Javeriana University in Bogota on March 21-24, 1983, and a policy workshop was held in Nyeri, Kenya on April 12-15. A workshop in Thailand has been scheduled for August and one will be held in Indonesia in November of this year. These workshops are intended to serve as a springboard for converting study findings into action-oriented policy.

Colombia:

The Colombian Workshop was organized by the research team, with Lic. Maria Eugenia Romero, the team's anthropologist, serving as workshop coordinator. It was held at the Javeriana University library, where presentations of the research team's 7-paper descriptive report were made to an audience of researchers, health professionals, company representatives, and ministry representatives.

Dr. Giorgio Solimano was invited to represent the Consortium and to make a presentation on preliminary study findings in the other three study countries. Ms. Joanne Spicehandler, in Bogota on other Council business, was also invited to represent the Consortium and moderate the session on the relationship between Infant Feeding practices and women's work. The Council's regional representative, Dr. Marcia Townsend, attended the seminar, as did

Mr. Marvin Cernik of AID. Information on the workshop, including participants, program, recommendations, and press coverage, is provided in the Spicehandler/Solimano site visit report in Attachment A. Copies of the research team's preliminary report on research findings were available at the meeting for distribution to all participants.

Although some representatives from the Ministries of Health and Planning attended, several key officials were unavailable due to a conflict with another meeting. Research team members, however, plan to meet with officials on an individual basis to present an executive summary of findings and workshop recommendations. An important result of the workshop and related press coverage to date, has been the invitations received by team members to discuss infant feeding issues and problems on radio and television programs.

Kenya:

A workshop on Kenyan study findings was held in Nyeri from April 12-15, 1983. This workshop was organized by the Kenyan research team, with Mr. Terry Elliott serving as workshop Coordinator. Consortium staff members, Dr. Michael C. Latham and Dr. Lani Stephenson, who were based in Mombasa during the months preceding the workshop, provided technical assistance with workshop preparations, agenda development and drafting of recommendations. A steering committee was formed chaired by Dr. Stephen Kinoti of the Medical Research Center. Other steering committee members included the Director of the Central Bureau of Statistics, Dr. K. Okoth Agunda, and representatives of the African Medical and Research Foundation and Ministries of Agriculture and Planning and Development.

The workshop was funded by USAID via the International Nutrition Communication Service (INCS) in Newton, Massachusetts. Consortium staff maintained close contact with Mr. Ron Israel, Director, to prepare for the workshop. INCS was represented by Mr. Richard Manoff.

A draft set of specific recommendations was available very shortly after the workshop. Dr. Agunda of the Central Bureau of Statistics has accepted responsibility for publishing and disseminating the survey results and, within the Ministry of Economic Development and Planning, will take a lead role in seeing that recommendations become a part of Kenya's five-year development plan.

In addition to producing a sound set of recommendations, an important outcome of the workshop has been the transformation of the Workshop Steering Committee into the Implementation Steering Committee. Its mission is to see that recommendations are translated into action. Three strong individuals will play key roles in this:

(1) Dr. John Kigondu, who as an AMREF employee in 1982 worked with Dr. Latham and the Consortium on the study of health professionals, is now Director of the MCH/FP Programme in the Ministry of Health, and has become chairman of the Implementation Committee.

(2) Dr. Stephen Kinoti, Director of the Medical Research Center (MRC) and chairperson of the Steering Committee, collaborates with Dr. Latham on several research projects and has committed his Center to future follow-up investigations and evaluations related to workshop recommendations.

(3) Dr. Chris Wood, Medical Director of AMREF, was a colleague in the Infant Feeding Study. Under his direction, AMREF will print and dis-

seminate both the booklet on Workshop Recommendations and the new Manual on Breastfeeding, and will also, through AMREF health training courses, teaching materials and media activities, assist with implementation of the recommendations. Dr. Kigondu, Dr. Kinoti and Dr. Wood are keen to continue to collaborate with the Consortium for these and other activities related to infant feeding. Prof. Bwibo at the University of Nairobi and the Kenya Breastfeeding Information Group also expressed a keen interest in working with us.

In the immediate future, Dr. Kigondu, Dr. Wood and Dr. Kinoti will, when the printed version is ready, formally present the Workshop recommendations to the Director of Medical Services (Dr. Koinange) in the Ministry of Health. This event is expected to receive media coverage and will become a launching point for changes in hospital health centers and clinics to improve infant feeding practices.

A Manual for Infant Feeding (as recommended by the Workshop) will be produced for wide distribution in Kenya. The purpose includes provision of up-to-date information and suggestions of practical procedures which will become the standard practice in all institutions and by all health workers. The manual will deal with such subjects as rooming-in, breastfeeding soon after delivery, the "insufficient milk" syndrome; advice on weaning, among other issues.

In addition to these two activities, a number of other actions are expected to be taken in the next year or two as result of the research and the workshop, including the final ratification and implementation of a Kenya Code of Marketing (based on the WHO/UNICEF Code); actions related to importation of breastmilk substitutes and their use by relief agencies; training programs and

short courses for health and related workers using the Workshop recommendations and the new manual as the basic texts; actions related to women in paid employment; and a whole series of activities in the area of public information and education.

The Consortium has established a sound working relationship with the agencies to be involved in the implementation of recommendations. This relationship is held in high regard and has resulted in an expressed desire by these local groups for technical and other assistance from the Consortium in the months and years ahead.

VII. FUTURE ACTIVITIES

In September, 1982, the Consortium began discussions with AID about the need for additional funding to continue the project beyond July 31, 1983, the contract termination date. The preceding sections of this report document the reasons why the Consortium has been unable, to date, to submit complete, integrated descriptive country reports to AID and prepare a sophisticated statistical analysis of data from the four countries. In order to understand fully the scope of work ahead and the need for a project extension, it is important to keep in mind the circumstances contributing significantly to delays in the Consortium's time table.

- Reports, data tapes and related materials required from each collaborating institution, arrived beyond the communicated deadlines despite Consortium follow-up through correspondence and field visits. A major problem for the collaborating institutions, has been the availability of staff to prepare lengthy English translations for Consortium use.
- extensive work was required in New York to prepare the data from each country for analysis.
- Much of the descriptive material submitted by the country research teams requires revision. The sheer volume of this material makes the process enormously time consuming. Consortium staff have had to devote major portions of their time, during a period when project funds were most constrained, to editing and correcting materials and communicating with the collaborating research teams. This process is ongoing and will continue in the months ahead.

To comply with changing AID requirements, the Consortium has had to adjust its work schedule to prepare materials for the AID meetings held in the first half of 1983. Preparation for the meetings required a redirection of staff energy out of sequence with the activities in our original work plan.

In order to comply as closely as possible with the requirments in the contract scope of work, the Consortium has been negotiating with AID for funds to complete the following activities:

A. EXPANDED DESCRIPTIVE REPORTS

For each country, an expanded report will include the descriptive aspects of the results of the infant feeding practices study in each country. Data will be brought to bear from the survey of mothers, the ethnographic research (phase I and II), and the marketing substudies, including the state of the industry and retail audit components as well as the consumer behavior portions of the survey. Questions to be answered in each site include the following, as specified in the original scope of work:

Feeding Practices

1. Patterns of infant feeding from birth to 12 months (in Indonesia, 24 months; in Kenya, 18 months). These feeding patterns will be classified by age of child into the seven feeding patterns outlined in the "Guidelines for Data Analysis," June 1982, p. 11, (previously submitted).
2. Patterns of infant feeding will also be classified retrospectively, using only the older children to determine what percentage of the children are breastfed for at least 3 months and 6 months with and

without supplementation of milk products and other foods. Depending upon the patterns revealed in each country, various classifications of exclusively breastfed, breastfed with supplementation, and not breastfed will be examined to create categories for the analysis of determinants of infant feeding patterns (see part II below) and to test the hypotheses labeled Biomedical Factors (see below).

3. The relationship of income and mothers' work status to patterns of infant feeding will be described in each site in terms of initiation of breastfeeding, introduction of liquids and solids, and termination of breastfeeding.

4. The analysis of the data, at the present time, indicates that only an extremely small subgroup in each of the four sites never initiates breastfeeding. An attempt will be made to characterize this subgroup to see if it is possible to locate indicators of the risk of never breastfeeding. Introduction of supplements and termination of breastfeeding will be examined in relationship to the possible determinants of these choices described below.

5. Detailed descriptions of certain specific aspects of infant feeding practices will be included in the descriptive report for each country:

    a. Infant feeding practices: Initiation of breastfeeding and pattern of supplementation in the sample.

    b. Range of supplements and substitutes and the frequency of use of each.

    c. Methods of preparation, place of purchase, and general patterns of caregiving will be noted for each site.

Marketing

1. Marketing practices will be described in connection with the research questions outlined in the list of hypotheses (see p. _____).
    a. Current practices and strategies which characterize infant food marketing in each site will be described.
    b. The intensity of current promotional activity by infant food sellers to mothers, health care workers, and others who influence infant feeding choices will be described.
    c. Description of the state of the industry will attempt to elucidate factors that account for the current marketing environment.
2. The chief products used for feeding infants for the first months of life will be described, and the availability to different socio-economic groups via different outlets will also be described. Promotional activity for each of these types of feeding products will be described.
3. Promotional messages for each type of infant feeding product in each site will be described as will the type of media used to convey the message, the coverage of the population, and mothers' impressions of the messages. Behavior of mothers in purchase and use will be described and related to exposure to media messages and information from health care workers, neighbors and relatives.
4. The results of the sample of retail stores in each site will be described in terms of the availability of different infant feeding products and point of purchase promotional techniques.

Ethnography

There are a number of topics which require collaborative work:

- analysis of knowledge and attitudes on infant feeding for each country
- consumerism in each country
- methodology: use of ethnography to predict response bias, etc.

Finally, there are topic areas emerging from the ethnograhy which should be developed into new conceptual tools. Some of these topics would require additional data collection. For example:

- infant feeding style
- status symbols
- gender ideology and infant feeding decisions

Technical assistance may be required to implement policies developed through this project. Two immediate contributions of the ethnographic component come to mind:

- identification of women's groups and institutions most likely to influence women regarding infant feeding
- use of ethnographic studies to develop culturally appropriate and effective messages for nutrition education and public awareness campaigns.

Health Infrastructure

Information from interviews with health care personnel and from ethnographic observation in health care institutions will be combined with survey data for mothers' recall of experiences in hospital to generate a picture of: hospital practices regarding the feeding of young infants, information con-

veyed by institutional practices and health care personnel within the institution, teaching, demonstrations, posters, signs, and other information received by mothers within each health care institution. The importance of health care practices in determining infant feeding choices will be assessed.

Magnitude of the Problems of Infant Feeding

The data sources available to the Consortium will be used to describe and analyze the conditions under which exclusive breastfeeding for the first 4 to 6 months of life may not be possible. The extent to which absolute barriers to recommended feeding practices exist in each site will be estimated, including the percentage of babies who cannot breastfeed at all and the percentage who cannot breastfeed for at least 3 months of life. Alternatives for dealing with these issues will be developed and their relative feasibility will be explored and discussed.

B. CONCEPTUAL MODEL AND HYPOTHESES

Understanding the determinants of infant feeding practices requires multivariate analysis so that the weight of the individual determinants can be assessed in relation to each other. The basis for this analysis will be the overall conceptual model as outlined in the conceptual framework working paper. This model served as the basis for the analysis of the health sector in Thailand presented to the AID site visit team on June 27. Interrelationships among the factors outlined in this model (with the exception of the marketing factors) were tested and analyzed to generate a picture of the influence of certain salient factors in the health system on infant feeding practices, controlling for exogenous but important factors, including work

status of the mother, income, education, among others. Similar treatment will be used to elaborate the overall model for each of the sites concerned. This will involve the creation of different sets of variables to represent health sector policies, mothers' work status, etc., for each of the studies, depending on the particular issues of importance in each site and the data which have been collected.

For example, regarding health services, in Bogota we have data bearing on the issue of whether the child was fed from a bottle during the first days of life in the hospital by the mother or by others. In the other 3 sites we do not have comparable data and cannot examine the effect of this factor. However, for Bogota this can and will be done.

Similarly, in Bangkok, we are able to examine the effect of varying degrees of contact between mother and infant in the earliest days of life, whereas this cannot be done in Bogota. In Semarang, we are able to examine the differences between deliveries at home and in a hospital, deliveries with midwives and with physicians, whereas in the other sites, we do not have an adequate sample of home births or of midwife assisted births to conduct such an analysis.

It will be necessary, for each of the countries, to specify the variables to be used in the model and to elaborate in the written analysis the scope and limitations of the model generated for each site. In addition to the survey data, we will use the ethnographic information and marketing information generated in each site to illuminate the relationships and to elaborate the context of infant feeding in each city.

In the course of specifying the overall model for each site, it will become possible to test each of the hypotheses in the broadest sense and then

in a more refined sense, controlling for various factors which may confound the state relationships. The various hypotheses will be examine as follows:

1. Health Care Providers

These two hypotheses deal with the differences between 1) hospital and home births and 2) traditional birth attendants and Western health care delivery systems. It may be possible to address these questions only in some sites, e.g., Semarang, where there is significant portion of women who received care in each of the two modes described. In other sites, such distinctions may not be possible.

2. Policies of Health Facilities

These hypotheses can be examined in each of the four sites but the variables necessary to do this will have to be specified differently for each of the four sites depending upon the issues in each city and also on the real differences in the data which were collected.

3. Social Factors

Data from the survey can be used to shed light on some of the factors described here. This is particularly true with regard to information which is received from health care personnel, from friends and relatives and also on mothers' perceptions of insufficient milk. On the other hand, none of these hypotheses can be tested meaningfully solely from the survey data. Examination of these hypotheses must rely heavily on the data gathered in the participant observation phases of the ethnography, especially the observations in the homes. These ethnographic observations will be organized to shed light on

the dynamics underlying each of these three hypotheses and will be enriched by specific quantitative information available from the survey data.

4. Women's Employment

These hypotheses can be tested using both the survey material and the ethnographic material. Significant attributes of women's work outside the home must be derived from the ethnography as well as from the survey instrument, since detailed information on specific work patterns is not always available from the survey itself. Women's employment *per se* will be carefully defined and the variables which represent employment will be assessed independently in each site. Work force participation will be examined in each of several socio-economic groups, and types of employment will be segregated to determine the specific effect of type of work, time away from home, etc., in contrast to income, education and other variables which are associated with specific labor force attributes. Each of several aspects of infant feeding patterns (i.e., initiation of breastfeeding, initiation of supplements, and termination of breastfeeding) will be examined separately in relationship to work force participation.

5. Biomedical Factors

The issues raised by the two hypotheses on biomedical factors can be tested directly from the survey instruments. This will involve a separate analysis in which infant feeding practices become the independent variables with biomedical factors as dependent variables, rather than using infant feeding as the dependent variable, as in the analyses described above. Information on hospitalizations, morbidity, and anthropometry can be used to test the

two biomedical hypotheses. It will be important to control for various potentially confounding factors in this analysis, including parental income and education, household composition, environmental sanitation, presence of refrigeration, etc.

The Consortium feels that this section of the analysis, particularly the specification of the overall model, requires creative utilization of skills in the handling of large data sets. For this reason, the capacity of the team is being augmented and strengthened by the increased participation of Dr. Anrudh Jain, Senior Associate and Deputy Director, International Programs, The Population Council, who has long experience and recognized ability in multivariate analysis of large data sets using complex models. Dr. Jain has long had a professional interest in the relationships among breastfeeding, amenorrhea and fertility. He has served as a consultant to the Consortium during the previous phase of the Infant Feeding Study.

SITE VISITS (See Attachment A for complete reports)

Country	Dates	Purpose	Staff Member
Kenya	9/14-10/10/82	Completion of phase 1 and 2 ethnography reports; integration of ethnographic findings with other study components for the preliminary analysis of study results; ethnographic follow-up as required on important issues emerging from the survey.	Penny Van Esterik
Thailand	9/22-10/7/82	To assist with preparations for comparative analysis meetings in November 1983, including: checking to see that data tape is in order, preparation of tables compatible with other sites, checking progress of codebook, identifying important relationships between key variables for further exploration.	Robert Smith
	10/5-9/82		Beverly Winikoff
Indonesia	10/7-21/82		Robert Smith
	10/7-16/82		Giorgio Solimano
Colombia	3/15-27/83	To participate in the workshop on Infant Feeding Study findings in Bogota.	Joanne Spicehandler (as add-on trip to other Council business in Bogota)
	3/20-24/83		Giorgio Solimano

The Population Council

CONTRACT No. AID/DSAN-C-0211
PIO/T No. 3698404

STATEMENT OF EXPENDITURES AT JUNE 30, 1983

		Budget 9/30/79 7/31/83	Expended To Date 6/30/83	Expended This Period 4/1/83-6/30/83
Salaries		$ 217,674.00	$ 259,873.95	$13,715.63
Fringe Benefits		51,757.00	63,294.65	3,497.47
Consultant Fees		39,656.00	43,558.00	1,300.00
Travel and Transportation (including Allowances)		89,825.00	79,035.76	1,537.31
Other Direct Cost		24,597.00	15,646.04	949.09
Materials and Supplies		730.00	5,017.69	1,834.02
Subcontracts		852,727.00	755,808.17	31,151.93
Total Direct Cost		1,276,966.00	1,222,234.26	53,985.45
Indirect Cost:				
This Period:				
Direct Cost (Less Consultant Fee-$1,300.00)	$52,685.45			
Program Management @ 19% =	10,010.24	231,315.00	220,132.55	10,010.24
Sub-Total	62,695.69			
Management and Support Services @ 12% =	7,523.48	176,256.00	167,878.08	7,523.48
Total Indirect Cost		407,571.00	388,010.63	17,533.72
TOTAL EXPENDITURES		$1,684,537.00	$1,610,244.89	$71,519.17

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The Population Council

CONTRACT No. AID/DSAN-C-0211
PIO/T No. 3698404

STATEMENT OF EXPENDITURES AT JUNE 30, 1983

(1) Summary of Commitments and Payments

	Award/Contract Awarded at 6/30/83		
	Estimated Cost	Amount Obligated	Amount Paid At 6/30/83
CI80.16A) CI81.60A) CI82.53A)	$174,478.00	$174,478.00	$143,070.00
CI80.17A) CI81.37A) CI82.10A)	171,351.00	171,351.00	162,051.33
CI80.43A	160,000.00	160,000.00	154,703.38
CI81.4A	81,158.00	81,158.00	75,683.18
CI81.24A	51,854.00	51,854.00	51,854.00
CI81.25A	48,873.82	48,873.82	48,873.82
CI81.28A	43,670.00	43,670.00	43,670.00
CI81.29A	10,276.00	10,276.00	10,276.00
CI82.19A*	32,296.00	32,296.00	29,067.00
CI82.20A**	25,593.00	25,593.00	16,076.00
CI82.29A	7,125.00	7,125.00	2,708.00
CI82.35A	20,224.00	20,224.00	17,775.46
CI83.28A	6,338.00	6,338.00	-
Total	$833,236.82	$833,236.82	$755,808.17

* Continuation of CI81.24A.
** Continuation of CI81.25A.

The undersigned hereby certifies: (A) That payment of the sum claimed under the cited contract is proper and due and that appropriate refund to AID will be made promptly upon request in the event of disallowance of costs not reimbursable under the terms of the contract, (B) That information on the fiscal report is correct and such detailed supporting information as AID may reasonably require will be furnished promptly to AID on request at the Contractor's home office or base office as appropriate and (C) That all requirements called for by the contract to the date of this certification have been met.

By: George A. Babb

Title: Assistant Treasurer and Comptroller

Date: September 13, 1983

STATUS OF REPORTS ON INFANT FEEDING STUDY FINDINGS

COLOMBIA

Completed:	Received
- Preliminary Report on Survey Research Findings in Spanish, 5 of 7 chapters have been translated into English:	In Spanish: 12/82
- infant feeding practices - study methodology - marketing legislation - beliefs, values and attitudes - women's work	English translation completed : 1-5/83
(Spanish version - 2 volumes, approximately 375 pages)	
- Ethnography Report in Spanish	In Spanish: 12/82
- Sector 1 (approximately 150 pages) - Sector 2 (approximately 100 pages) - Sector 3 (approximately 125 pages)	
- Marketing Report in Spanish with summary translations - 5 volumes	
- summary report (41 pages) - state of the industry study (approximately 300 pages) - government study (approximately 300 pages) - health sector study (approximately 250 pages) - retail audit (approximately 300 pages)	: 7/82

To Be Completed:

- Preliminary Report on Survey Research Findings, translation of remaining 2 chapters:
  - health sector
  - infant foods industry
- Ethnography Report, translation into English

INDONESIA

Completed:

- Preliminary Report on Survey Research Findings in English, 4 of 8 chapters: : 4/83
  - demographic information
  - descriptive information on infant feeding patterns
  - health services
  - consumer behavior

(incomplete draft approximately 50 pages)

Received

- Ethnography Report, Phase 1, in English (302 pages) : 2/83

- Ethnography Report, Phase 2:

  - health centers, English draft (43 pages) : 4/83
  - retail outlets, English draft (53 pages) : 4/83

- Marketing Report

  - draft field report on infrastructure, health services, state of the industry and retail audit, Semarang, in English (45 pages) : 12/82

  - report on infant foods industry and government policy in Indonesia, retail audit in Jakarta and other cities, in English (approximately 400 pages) : 1/83

To Be Completed:

- Preliminary Report on Research Findings, English version of remaining 4 chapters:

  - women's work
  - maternal characteristics
  - biomedical factors
  - role of traditional birth attendants

KENYA

Completed:

- Preliminary Report on Research Findings (72 pages) : 3/83

- Ethnography Report, Phase 1 (93 pages) : 10/82

- Ethnography Report, Phase 2 (81 pages) : 5/83

- Marketing Report

  - industry and retail audit report (approximately 200 pages) : 11/82
  - government report (51 pages plus attachments) : 1/82

THAILAND

Completed:

- Report on Study Methodology (90 pages) : 11/82

- Preliminary Report on Survey Research Findings (141 pages) : 6/83

- Ethnography Report, Phase 1 (138 pages) : 11/82

- Marketing Report

  - incomplete draft report on health care providers : 2/83
  - state of the industry and retail audit report : 6/83

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To Be Completed:

- Ethnography Report, Phase 2
- Marketing Report
    - health care providers

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