

**IMPROVING YOUNG CHILD FEEDING PRACTICES
PROJECT FINAL REPORT**

1992

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ACRONYMS

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| A.I.D. | Agency for International Development of the United States Government |
| KAP | Knowledge, attitudes and practices |
| NGO | Non-Governmental Organization |
| PRITECH | Project for Primary Health Care Technologies |
| SES | Socio-economic status |
| TWP | The Weaning Project |
| USAID | The country mission of A.I.D. |

ACKNOWLEDGEMENTS

The Weaning Project was a project of partnerships. Many institutions and individuals made it possible for this report to tell a success story and to hold out hope for achieving major improvements in infant and young child feeding practices that could reduce child growth faltering and undernutrition.

First, the vision for such a project was born in the Office of Nutrition under the direction of Dr. Martin Forman. Without his interest in further exploring the behavioral component undernutrition and the potential contributions of communication to nutritional improvement, the state-of-the-art of nutrition communication would never be so well developed within the public health field.

Second, many host countries' institutions and donors recognized the contribution of poor feeding practices to infant and young child undernutrition and wanted to take action. They were generous with their time, resources and insights. Host-country teams undertook assessments, experimentation with program operations and evaluations in a rigorous enough way to make real contributions to the field of infant and young feeding programming. Below is a short list of some of the key people for the country programs.¹

Indonesia

Nutrition Directorate, Ministry of Health: Tarwotjo, Benny Kodyat, Suaspendi, Cloetilde Marpaung, Siente Masoara, Alwi Alhabshi, Martini, Benny Soeyianto (East Java), Erlan Jarlan (NTB).

Intervista: Nurandi, Felicia Uterodewo Yayasa Indonesia Sejahtera: Ratna Kuriawati, Jennifer Zeitlin

USAID/Jakarta: Julie Klement, Joy Riggs Perla, M. Volgaropolos, Sonya Rahardjo, Tuti Suyono

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Cameroon

CARE: Eleanore Seumo, Judith Collins, Abdouraman Map Bappa, Charlotte Johnson Welch, Brian Cavanaugh, Toukour Haman Seyo. Atelier de Materiel Audiovisual: Marieke Verhallen
Center for Nutrition, IMRMP: Sarah Gwangwa'a

USAID/Yaounde: Gary Lienen, Bibi Essama

A.I.D./Africa Bureau: David Eckerson

Education Development Center: Christine Hollis

Consultants: Luc Mebenga Tamba, George Koppert, Olivia Holmes, Nancy Mock, Cathy Tilford

¹ Each country report (ref. 1-6) contains a full listing of participant institutions and individuals.

Swaziland

Ministry of Agriculture and Cooperatives: Juliet Aphane, Christabel Motsa, Magalela Ngwenya, Peter Dlamini

Ministry of Health: Qhing-Qhing Dlamini, Lombuso Nxumalo, Thandi Mndzebele, Mapule Masuku

UNICEF: Mark Sterling, Lena Nilsson, Rodney Phillips, Angela Mbuli

USAID/Mbabane: Mary Pat Selvaggio

Consultants: Benedict Tisa, Mona Moore

Ecuador

Ministry of Health: Yolanda de Grijalva, Maria Elena Acosta, Magdalena Vanoni, Plutarco Naranjo

Productores Independientes: Frederico Ehlers

ASISTEM: Ana Maria Merchan

USAID/Quito: Audrey Wight, Martita Marx, William Goldman, Kate Jones Patron, Fernando Ortega, Joe Baldi.

Ghana

Ministry of Health: Dodu, Rosana Agble, Florence Addo, Adibo, Michael Neequaye, J. Armah, Charlotte Gardiner

USAID/Accra: Ray Kirkland, Joanna Laryea,

A.I.D./Africa Bureau: David Eckerson

Consultant: Adwoa Steel

Third, the project staff and the advisory board continued support for the project's goals and vision throughout and offered timely, practical advice that helped keep us on course and to see the forest as well as the trees.

The Weaning Project Staff: Ellen Piwoz, Joanne Leslie

Advisory Board: Alan Berg, Lukas Hendrata, Yngve Hofvander, Derrick and Patrice Jelliffe, Michael Latham, Susan Scrimshaw.

BACKGROUND

The problem of infant and child malnutrition has been recognized for decades, and for decades there have been attempts to address it. Generally, throughout the 1960s and 1970s, efforts focused on supplying food (generally for the family and specifically for the child) and on decreasing child illness. While household practices were recognized as a contributing factor, it was thought that they were too ingrained to change or that the change would take too long. Generally, program planners strove to introduce a new action or product so effective at reducing undernutrition that daily practices would make little difference.

To date, this has not been achieved. All of the projects that introduced imported, high nutrient foods; local, centrally processed foods; village-made mixes; or health or hygiene measures encountered the same reality: they could not completely overcome the effect of poor practices--dilution of the food, low feeding frequency, low quantity of food per meal, poor food hygiene, inadequate breastfeeding, lack of persistence in feeding the "fussy eater", etc.

Over time, more attention was given to the behavioral aspects of child undernutrition. By the mid-1980s:

- There was a clear picture that child undernutrition begins early, often by four to six months when semi-solids should begin to contribute to caloric adequacy.
- There were many studies documenting feeding practices and a complex of determinants of those practices ranging from perceptions of food digestibility in young children to perceptions of what would contribute to the child becoming a productive, intelligent adult. Few of these studies, however, documented which of the multitude of factors could be modified or enhanced in a program setting to improve young child feeding.
- Recent programs to improve breastfeeding practices had built effective program strategies from an analysis of resistances to and motivations for women to adopt optimal breastfeeding behaviors. This approach had much to offer young child feeding beyond just breastfeeding practices.
- A program in Indonesia (1979-1982) demonstrated that through an education/communication program alone aimed at improving feeding practices, growth faltering was delayed and indeed, the nutritional status of 40 percent of project children under two years of age was improved (7).

It was time to see if these experiences could be used to build better young child feeding programs focused on improving household practices for weaning-aged infants and children. The project designed by the Office of Nutrition in the Agency for International Development (A.I.D.) placed emphasis on a thorough analysis of behavioral problems and the creation of comprehensive strategies with nutritionally sound, low-cost and sustainable actions to address these problems. In late 1984, the contract to implement this project was awarded to Manoff International Inc. (which became The Manoff Group Inc. in 1988.)

The name, The Weaning Project (TWP) was selected for a variety of reasons, among them:

1. The focus was on the weaning process--not breastfeeding-- a process that begins when something other than breast milk is given to a child and ends when the child receives the family diet not supplemented by breast milk. Because the beginning and end of this period vary substantially across cultures from the neonatal period to only about five or six months, to a beginning of about four or five months of age with a duration well beyond two years, the project took as a general mandate to address feeding in the first two to three years of life. While the project worked to promote breastfeeding, it was done with the context of the overall pattern of child feeding.
2. There is no modifier such as "food" or "practices" to describe "weaning." This was deliberate, as the project would work in both areas.

The approach that would be taken in developing the project was the one being developed by Manoff International through twelve years of program experience in social marketing. A social marketing approach that relies heavily on working with consumers to understand their behaviors was used to defining project activities. There was already a wealth of recent experience on which to draw, since Manoff International:

1. had worked with the Indonesians on the Nutrition Communication and Behavior Change Project that had shown improvement in nutritional status by a communications intervention alone;
2. was already providing assisting Catholic Relief Services in the Dominican Republic and the Ministry of Health in Ecuador to replicate the Indonesia results, while streamlining the process.

Social marketing is the application of marketing principles to social program design and management. It is a systematic approach to solving problems, in this case nutrition problems related to the adoption of such optimal behaviors as utilization of nutrition services like growth monitoring, trial and continued use of a product such as an infant food, and improvement of household or community practices such as the timing of introduction of foods and their consistency, frequency of feeding, and quantity.

Because social marketing programs begin with an analysis of current behavior, and perceptions related to those behaviors, its strategies are driven by consumer needs--what it will take to make it easier for consumers/program beneficiaries to follow better practices. Applying social marketing's techniques can lead to modifications and innovations in the design of all program components. While The Weaning Project was designed to focus only on the communications component, it soon expanded its areas of action. Project strategies ultimately included policy, training, communication, product development, and other actions such as child care and improvements in household hygiene.

The application of a social marketing approach to each country program meant that the general framework for activities was generic across countries, implemented in four phases. A synthesis of what happened in each of these phases across countries constitutes the body of this report.

In this project, the process was as critical as the outcome. The key activity phases were:

1. **Assessment** comprised an in-depth look at current infant and young child feeding practices and a determination of which were most feasible to change under what circumstances.
2. **Strategy formulation** encompassed a review of key behaviors for change and decisions on how to undertake key activities within existing priorities and programs. Emphasis initially was put on training and communication but was later expanded to make a more comprehensive country strategy (for behavior change).
3. **Implementation** usually included the launch of a multi-media communication program designed and executed by local talent with both promotional and counseling materials and the training of local staff in up-to-date concepts of optimum child feeding and how to communicate with women and their families.
4. **Evaluation** was done in only two countries but in these countries it was rigorous and, indeed, demonstrated project success at improving practices, and, in the case of Indonesia, improving the nutritional status of weaning-aged children.

Although the framework was consistent across country programs, the content and the look of each program was different because each grew from the assessment and the country context within which it was being developed. There was no template that was passed to each country, and the projects were not viewed by the country directors as just an extension of a program from "headquarters." Instead, the Washington-based project offered assistance to local efforts. Partnerships were formed with host-country agencies for each project. Partnership here meant joint decision making and financing.

In three out of five countries, support was found for counterpart activities that went directly to the implementing institution. This support was in addition to the normal counterpart contributions of office space and personnel. The examples of direct funding were: (1) Indonesia, where USAID/Jakarta supported activities, first through the National Family Planning Board and later through the Ministry of Health; (2) Cameroon, where CARE/USA and CARE/Canada supported activities; and (3) Swaziland, where UNICEF/Mbabane gave both financial and staff support to the project. In the cases of Ecuador and Ghana, financing for local activities was secured, but the money came to The Weaning Project from USAID/Quito (Ecuador) and REDSO (Ghana) and then to the country program.

INITIATING COUNTRY PROJECTS

Country Selection

The contract between A.I.D. and Manoff International called for demonstration projects in four countries and an unspecified amount of short-term technical assistance. The initial contract amount was for US \$1,385,205. Although the worldwide cable announcing the project to A.I.D. missions was delayed several months, discussions continued in Washington about criteria for country selection and about the interest of various countries in participating. Meetings were held with each regional bureau and with several multilateral donors. When the cable went out, there was already a short list of prospective countries.

While country selection criteria were extensive, including such factors as extent of country undernutrition and an analysis of what part of the problem would potentially be improved through communication activities, the reality of country selection was much different. This was due in part to the fact that infant and young child feeding problems are almost universal, and although some countries obviously have a worse under nutrition problem than others, a serious problem can almost always be found. What drove country selection more than anything else was: (1) the level of interest on the part of the host-country institution and the USAID mission (in all of the countries where the project operated, except for Ghana there was a USAID nutrition advisor); and (2) the ability to find money for host-country colleagues for project implementation.

The following summary condenses the country selection process:

| <u>Country</u> | <u>Initial Visit Date</u> | <u>How Derived</u> | <u>Outcome</u> |
|----------------|---------------------------|--|--|
| Indonesia | Feb 1985 | Project Director already working in Indonesia mission requested a brief visit to explore project possibilities to add nutrition to family planning program | Became one of countries for demonstration project - - proposal funded directly by USAID/Jakarta |
| Peru | April 1985 | Response to cable--wanted to undertake program in response to results of recent National Nutrition Survey. | Several visits made—assessment virtually complete but had to stop work because of political unrest and instability of country. Colleagues could not complete work. |
| Cameroon | April 1985 | Response to interest of Africa Bureau. Initial visit to several West African Countries | Became one of the countries for demonstration project. Proposal funded by CARE. |

| <u>Country</u> | <u>Initial Visit Date</u> | <u>How Derived</u> | <u>Outcome</u> |
|----------------|---------------------------|---|--|
| Zaire | April 1985 | Response to interest of Africa Bureau and contractor (ORT) working on bilateral nutrition project in Zaire | Completed assessment in Kinshasa and drafted a communication strategy. Project failed to proceed because of problems with larger project of which it was a part. |
| Swaziland | March 1986 | Response to cable. USAID interested in assisting National Nutrition Council with desire to act on results of National Nutrition Survey. USAID CTO made initial trip | Became one of countries for demonstration project. Proposal funded by UNICEF/ Mbabane |
| Ecuador | May 1986 | Response to USAID/ Quito interest to add nutrition to bilateral Child Survival Project. Project director already working in Ecuador. | Became one of countries for demonstration project. Proposal funded by USAID/Quito in phases |
| Ghana | April 1985 | Response to Africa Bureau | Decided not work there due to instability and lack of resources |
| | March 1988 | Response to interest from Africa Bureau, REDSO, and country Division of Nutrition | Undertook the assessment, formulated a strategy and assisted with draft materials. REDSO funded local activities. |

Project Organization

The project's Washington-based staff was lean. There was a full-time project director, a nutritional anthropologist by training with extensive experience in social marketing, and another full-time staff member, an anthropologist with an M.P.H. in nutrition. For the first year and a half there was a half-time nutritionist. Education Development Center, the subcontractor on the project, had a half-time person, a communicator and trainer. A small core of consultants aided the staff on country projects. Guidance was provided to the staff by an advisory board that met three times during the project and by consultative groups convened to help with specific technical aspects. One consultative group was called to discuss the assessment protocol and another was convened to discuss project evaluation.

In each country, the project was organized slightly differently, however, there were some features in common. Each country had a project director and a small team of colleagues dedicated to nutrition or young child feeding programs, even if not full-time. This team, together

with staff and consultants from Manoff International, formed the country working group. In a country where activities were decentralized, there was a central working group and provincial working groups.

Establishing this structure strengthened the partnership between the project's Washington-based staff and the countries' staff and activities. The technical assistance was not viewed as imposed by a group of overseers, but as extra hands to solve problems and carry the project forward. Establishing the working group also helped give project activities continuity of outlook and provided a group that could be trained in up-to-date concepts of child feeding and in social marketing skills.

Each country project also established an advisory group comprised of individuals from institutions with an interest in child feeding and/or with some potential to play a role in project implementation and/or with special skills. The composition of the advisory group was not static, but changed according to the projects' needs.

While in every country one institution took the lead, the project was actually inter-institutional in nature. The combinations, which encompassed a wide variety of alliances, illustrate that no one scenario is ideal. The lead institutions tended to be ministries of health, but there was also a non-governmental organization (NGO) and a ministry of agriculture. Collaborating institutions included divisions of women's affairs, ministries of religious affairs, alliances of NGOs, social security administrations, departments of community development, and divisions of health education.

Project Support

As mentioned earlier, TWP could provide only initial support for country activities, since the total contract amount was not sufficient to fund Washington-based activities, four full demonstration projects, and short-term technical assistance. Although there are many caveats, it was estimated that about \$200,000-\$250,000 would be needed to implement a four-year demonstration project at a regional level in a large country or at the national level in a smaller country. This proved to be the case. The estimate for technical assistance was about this same amount, but in reality, at least for intensive demonstrations in Indonesia and Cameroon, this estimate proved to be about double the estimate or close to \$500,000. Swaziland and Ecuador, if projected to completion, would have been about \$350,000-400,000 in technical assistance expenses. The following chart summarizes project support:

| <u>Activity</u> | <u>Amount</u> | <u>Source</u> |
|----------------------------|---------------|------------------------------------|
| Washington-based - general | \$361,406.53 | Office of Nutrition |
| Indonesia | | Office of Nutrition/ANE Bureau, |
| Technical assistance | 485,501.52 | USAID/Jakarta |
| In-country | 220,000.00 | |
| Cameroon | | Office of Nutrition/Africa Bureau, |
| Technical assistance | 494,969.81 | CARE/USA; CARE/ Canada |
| In-country | 200,000.00 | |

| | | | |
|----------------------|------------|--|--|
| Swaziland | | | Office of Nutrition/Africa Bureau, UNICEF/Mbabane |
| Technical assistance | 149,276.61 | | |
| In-country | 150,000.00 | | |
| Ecuador | | | Office of Nutrition, USAID/Quito to TWP |
| Technical assistance | 232,879.57 | | |
| In-country | 130,000.00 | | |
| Ghana | | | Office of Nutrition/REDSO in- country, REDSO to TWP |
| Technical Assistance | 168,817.54 | | |
| In-country | 60,000.00 | | |
| Zaire | | | Office of Nutrition, Organization for Rehabilitation and Training |
| Technical Assistance | 70,307.06 | | |
| In-country | n/a | | |
| Peru | | | Office of Nutrition |
| Technical Assistance | 37,470.24 | | |
| In-country | n/a | | |
| Other | 1,208.71 | | Office of Nutrition and Agriculture |
| | ARDN | | |

The support available through the contract was about two-thirds core funding from the Office of Nutrition and one-third "buy-in" funding from missions and regional bureaus. In addition, another \$570,000 was brought to project activities by grants given directly to host-country project teams. This sum does not include host-country institutional contributions of staff, office space, and in some cases, transport.

ASSESSMENT²

Background

A feature of most successful public health programs is that they know their program's clientele and use this knowledge to tailor policies and activities. Less successful aspects of programs are often explained with phrases such as "we never anticipated that people's reactions would be...". Social science researchers can enhance program success by offering managers a glimpse of the clientele they serve. However, managers seldom have the money or time to include this type of research in their programs.

This means that effective research must be completed quickly, be low cost, have immediate relevancy for programming, and yield new, useful insights on the clients' perspective. The methodology used in The Weaning Project to explore and better understand young child feeding practices met these and other criteria. It was:

- consumer-based, and as open-ended and free of researcher bias as possible;
- relevant for programming purposes, particularly the design of communication and training activities;
- adaptable to different situations (the same basic protocol was used in six countries);
- replicable or manageable by professionals with limited research experience; and
- relatively quick and affordable to many development projects.

The methodology used in The Weaning Project is the product of nine years of project experience with consumer research, most of it related to the exploration of infant and young child feeding practices.

In the mid-1970s, to design of a weaning food and oral rehydration education program in Nicaragua and the Philippines (8), local researchers were trained to apply basic survey techniques and some open-ended questions with consumers, not too different from the KAP surveys traditionally and also done by health educators. Field work took about two months. Evaluations of the resulting educational programs showed that their weaknesses were due primarily to the fact that the initial research had been too "researcher-determined" and missed many subtleties needed for message design.

In the late 1970s, research was designed for a nutrition education project in Indonesia (9, 10) in a modified ethnographic style, with open-ended, detailed studies (interviews and observations) in

² Much of this chapter is taken from a paper prepared for the United Nations University publication on Rapid Assessment Procedures (RAP), in press.

carefully selected communities in the program area. In addition to the ethnography, an innovative step was added: participatory research borrowed from marketing. Mothers were asked to try out potential recommendations to get their reactions to preliminary messages and to solicit their contributions to revising the proposed suggestions for changes in standard practices. This worked well. The resulting educational program was associated with improvements in practices, increased intake of calories and protein, and improved nutritional status among children under 24 months.

However, this methodology required nine months of field-work and took almost a year and a half from design through analysis to move. The process was guided by a full-time expatriate nutritional anthropologist. Not all programs have that luxury.

Following on this success, the challenge was raised to reduce research time and to incorporate more techniques that would help to understand life-style context: aspirations, desires, fears, attitudes toward child rearing, etc. For work in three projects in the early 1980s, a component of focused group discussions was added, but the step of the trial of practices and much of the other contextual information gathering, typical of ethnographic research, was eliminated.

This work was more like a rapid assessment. In the Dominican Republic the process took about two months (11); in Ecuador, about three months, from planning through analysis (12); in India (13) about six months before the special step of the trial of recommended practices was added. Again, almost full-time guidance from a nutritional anthropologist was provided in each case.

While the resulting programs in the Dominican Republic and Ecuador were relatively successful, there was a feeling among project personnel that the education would have been better if the research plan had allowed for more exploration of the reasons for mothers' practices and particularly their willingness to change.

Based on these experiences and other work in nutritional anthropology (14,15,16), The Weaning Project developed a protocol for exploring young child feeding practices that it refined in six countries. The protocol was drafted by TWP staff members and revised on the basis of comments from a special expert meeting of qualitative researchers.

The protocol was first implemented in Indonesia and Cameroon in its most complete form and with a large amount of foreign technical assistance (1,2,17). Later, in Swaziland (3), Ecuador (4), and Zaire (6), the most salient pieces of the multi-step protocol were chosen, modified, and implemented primarily by host-country researchers, with periodic technical assistance. After these experiences, there was an opportunity to further refine the protocol in Ghana. Again, based on experience, the protocol was reduced and this time implemented by a team of Ghanaians, with only brief orientation from TWP staff (5).

Methodology

Many of the decisions made in designing the methodology and writing the protocol were to allow researchers to go beyond the usual researcher-determined questions about feeding

practices and to explore how mothers, in their terms, make decisions. To do this, techniques from market research, anthropology, and nutrition assessment were combined to help the researcher understand not only the importance of the different determinants of infant feeding practices, but also the life-style context in which infant feeding decisions are made. The TWP staff believed that unless we understood people's life styles--their aspirations, desires, ideas about children, their roles, their sense of control--we would not realize our goal of sustainable improvements in practice.

The assessment methodology has several characteristics:

- It is highly qualitative and innovative. It included sections on parents' aspirations for their children, on expectations on child development, on maternal self-confidence, in addition to a step that involved the actual trials of certain recommendations by families.
- It calls for a small sample. Even for a national program--say, in Ecuador or Ghana--no more than about 150 families were represented in the research and of those, only about 50 participated in-depth.
- It was in-depth. Time was spent not in talking to a lot of people, but in talking to people in detail--spending time with them preparing food and feeding their children, just talking, and constantly asking why.
- It is rapid, at least by some definitions. In the first countries, where it was implemented in pilot regions, the process took a year. Later, the time was reduced to six months for a national assessment. It at least became more rapid.
- Its implementation requires minimum technical assistance, although it does require a principal investigator with knowledge of qualitative research.

The protocol is divided into four parts, corresponding to the research phases. Each phase has several steps. Not all of the steps need to be carried out in every situation.

First is the problem identification phase, during which researchers seek to:

- find critical problems impeding proper feeding and care of children;
- identify resources to solve problems. (Resources include physical and financial resources as well as outlooks and attitudes.)

The methods are:

- *Literature review.* A compilation of relevant information from all previous research. Most of this research is quantitative in nature; therefore, the review serves as a springboard for the results ultimately obtained from the qualitative process.

- *Focused group discussions.* These are extremely open-ended and explore maternal roles, sense of control and confidence, ideas about child rearing, aspirations for children, general feeding practices, and images associated with certain practices.
- *Ethnography.* This is a community and household exploration of food availability, women's time availability, cultural norms about child feeding, ceremonies, people who influence feeding decisions, the details of food preparation, serving and consumption, childhood morbidity, etc. It usually includes child anthropometry and dietary recall.

After the Indonesia and Cameroon experiences, this phase was modified:

1. Unless there are persons skilled in focused group discussions in-country, these are eliminated in this phase because of the difficulty of training people well enough in this technique to get quality information.
2. The ethnography has been collapsed to in-depth household interviews and observations and some key informant interviews. The extensive questioning on food grown and purchased, on relationships between family members and on ceremonies was dropped. Although more limited, the work is structured judiciously--the households are selected carefully. They include a range of different age children, usually under two years old, and favor children who are not growing well or are undernourished.

Depending on the scope of the work, this initial phase can take up to three months, including planning and training investigators.

Second is the analysis phase, during which researchers:

- determine nutritional benefit or harm of current practices; and
- identify modifications in practices and rationales for them.

The methods include:

- *case histories*
- *dietary analyses and feeding histories*
- *tabulations and content analysis* of the different topics, including the dietary analysis by geographic area, by the age and/or nutritional status of the child, by the amount of time the mother spends with the child, etc.; and
- *matrices to compare ideal and real practices* and list major resistances or motivations that may influence a change in the practice.

This process is done at research headquarters and takes about a month. Most research methodologies end at this point. It is noteworthy that in The Weaning Project, this was not the case.

Third is the intervention or concept testing phase, during which researchers:

- determine what mothers are willing to try and why;
- confirm what mothers can do over a brief time period; and
- retest the successful concepts with even more mothers.

The methods are:

- *Participatory research* where the researcher returns to the homes of mothers who participated in the in-depth interviewing and provides information to these mothers about their children and discusses with them their willingness to try new practices. Then, with some mothers, the researcher actually asks them to do it--for example, to try to give their children one more meal, or a snack between meals, or to make a different weaning food. The researcher returns to the home to see if the mother has been able to follow the recommendation and if the so, exactly what she has done. This step has proved easy to do and analyze once the recommendations have been decided upon. This step is indispensable.
- *Focused group discussions*: The most successful ideas and practices to emerge from the trials are taken to other communities where focused group discussions are held to get the "top-of-the-mind" responses to the new ideas from people who have not participated in the earlier work and to get reactions from health workers and clinic nurses--those responsible for disseminating the new information.

This phase takes four to six weeks from planning through analysis.

Fourth is the synthesis phase, during which researchers:

- review all of the information;
- synthesize information from the problem identification and concept testing phases; and
- write a brief for program designers.

This brief serves as the basic reference for those making strategy decisions and developing the creative work. It is the link between the researchers and the programmers that is so often missing. The style in which it is written is abbreviated to assist programmers to find the facts quickly and to understand recommendations about what to do.

The report contains the following sections:

- the environment or lifestyle of the population;
- a summary of current infant feeding practices;
- a list of the most promising practice improvements, the major resistances to change, and the possible motivations to stimulate change; and
- A review of potential media--their reach and the frequency with which they are heard or used.

In order to train the local research team, modify the research protocol for local conditions, and leave a guide that can be used again for other research, the project team in each country wrote a qualitative research assessment manual. The first draft was based on the theory of the method and what should happen. Later, the manual was adapted to what actually happened, offering guidance on important decisions to make at each step. The manual included all of the question guides.

After assessments had been conducted in all countries, the project team at The Manoff Group was working to distill the experience in a manual when they were approached by the A.I.D.-supported PRITECH project. PRITECH has taken a decision to focus more attention on child feeding as it relates to prevention of the severe consequences of diarrheal disease. With some funding from PRITECH, TWP staff wrote a qualitative research manual for PRITECH (18) that uses TWP experience, adapting it for use in diarrheal disease control programs. This protocol has now been used in PRITECH-supported research in several West African countries. WHO's Diarrheal Disease Control Unit has also funded several research projects using this protocol in Latin America.

Implementation

The length of the assessment process depended on many factors, such as whether a private group was contracted to do any or all of it, whether field workers and supervisors were full or part time, the number of languages, the experience of the field team and managers, and the timelines of assistance for analysis and report writing. Also, in the majority of cases, because working group members were deeply involved in the research phase, training them in these research techniques was viewed as a priority. This caused some delays, but in the long run it led to the creation of a small cadre of professionals with good knowledge of qualitative research methods and their application. Once the process was streamlined, the time it took to complete an assessment, from the initial plan to a draft report, was about six months.

Implementation costs were relatively inexpensive, an average cost was \$30-35,000, including contracts with private agencies or paying a research team. This cost, however, is exclusive of technical assistance and the salaries of the research manager and those of any advisory group that might be formed to comment on the research as it is planned and implemented.

Highlights of Findings

In each case, the assessment yielded a wealth of information that provided new insights into the problem and that indicated concrete actions that could be taken. Each assessment produced a detailed volume of results and a summary. The country assessment summary is contained in each country report (1-6).

Because the results are most meaningful in their country context, details are omitted here. What is given below is a synthesis of some of the salient features from almost all of the reports. These insights appear to be broadly applicable since they emerged from assessments that were carried out in a variety of contexts ranging from the isolated, poor areas of the extreme north province of Cameroon and Ghana, to the semi-urban areas of Swaziland and Indonesia, to the heavily urban areas of Ecuador and Zaire.

The results can be divided into two types: (1) feeding practices and (2) how to improve feeding practices.

1. Feeding practices

- *The need to balance between food and practices.* The focus on practices made it abundantly clear that unless breastfeeding techniques and weaning practices are addressed, any food will have minimal impact. For example, just promoting "Breast is best" is not useful when what women need to practice is more frequent breastfeeding. Likewise, a highly nutritious food loses its benefit when diluted.
- *Target changes in practices.* There are a lot of practices (consistency of food, frequency of feeding, nutrient density, quantity/meal, hygiene, patience and persistence). These can all be included in a program when they are considered priority for the needs of different aged children. Generally, the following priorities held across cultures:
 - 4-6 months: introduction of a food; concept of consistency--a semi-solid, reducing water content.
 - 7-12 months: feeding frequency and food variety--use of family foods.
 - 13-24 months: feeding frequency and food quantity--family foods plus snacks.
 - 7-24 months: need to supervise eating and to be patient and persistent.
- *Don't ignore the first days of life.* Although this concept is recognized now, five years ago, it was less understood. Bad practices begin with prelacteal feeding--there was virtually no exclusive breastfeeding in any culture. In addition to traditional and non-

traditional prelacteal foods, there is an increasing tendency to introduce foods early to "accustom the child to food," often because the mother must return to work.

- *Expect the worst characteristics of the daily feeding pattern in feeding during and immediately following illness.* This area presents a big challenge. If mothers allow children to determine their own feeding pattern, they will do it more so during illness. If mothers give only a small amount of food regularly, they will reduce the quantity even more so during illness. However, mothers generally continue breastfeeding and do not withhold food because they think they should, but because the child "just won't eat". Patience and persistence are already well recognized as characteristics of feeding the sick child, but are not always practiced. In addition, there is no concept or practice of recuperative feeding in any culture.

2. What Can Be Done

- *Recognize the extent to which families can do more for themselves.* The household trials gave a realistic picture of where poverty and/or lack of coping skills were so significant that the mother, family unit, and community could not change their practices enough to have significant nutritional impact. For example, in a district in East Java, Indonesia, it seemed that almost all families (90% or more) could and would do a lot to improve their practices related to young child feeding. However, in Ghana and parts of Swaziland, the picture was not as optimistic. Closer to twenty percent of the families had a serious shortfall in resources. Families in the Extreme North Province of Cameroon and the high Sierra of Ecuador appeared to have an even worse shortfall.

Undertaking this type of assessment allows planners to know what to expect if no additional food or economic assistance is given, and it allows for that assistance to be better targeted to where it is needed.

Of great importance and what emerged resoundingly from all assessments was that the majority of families could and would do more to improve conditions for their children. Enabling people to optimize their resources and current feeding patterns should become the priority.

- *Distinguish the nature of "resistances" to change.* Both "environmental" and "attitudinal" resistances were identified. Environmental resistances included unavailability of certain foods and lack of feeding utensils. However, the most important environmental barrier in each country was misinformation about child feeding by health care professionals.

"Attitudinal" barriers included such ideas as the inability of children to swallow or digest particular foods or preparations. Two key resistances that were seen commonly and are new or had a new twist were:

- *Maternal self-confidence.* A woman's low social status and her feeling that she exists to serve her family, which often means that she feels powerless in the face of resistance from her child. She dares not exert her will. It appears that generally mothers with well nourished children have more self-confidence; that is, they introduce foods when they believe it is right rather than when the child "accepts" the foods. If they stop breastfeeding early, it is more likely to be because they want to than because of their child's reaction; they are more likely to persist in feeding their child when the child refuses; and, they are more willing to try new foods and practices.
- *Perception of time.* Having time was not related so much to real busyness or hard labor as to perception of busyness and tiredness.

It is important to pinpoint motivators or enabling factors, i.e. "If my husband told me." "If I just understood." "If I had a measuring cup or plate." "If the food is well cooked, then my child could digest it." Two key facilitating factors that were seen commonly were:

1. The significant role of fathers. Fathers seem to be playing and seem willing to have a larger role related to child feeding than anticipated. Their contribution has been undervalued. Fathers could do more, particularly when it comes to the purchase of "special" calorie-dense foods for young children.
 2. Food vendors and owners of small food shops or stalls. These individuals have the potential for disseminating information about young child feeding, especially related to food purchases. These people are often one of the most stable and abundant potential "sales force" in the community and in most instances are credible sources of information on food-related topics.
- *Learn where the differences and similarities are across cultures*, i.e. what behaviors and concepts are similar and can be promoted nationally and which behaviors require regional or even more local adoption. Some examples are whether programs should be different or similar for highland and coastal Ecuador, Java and Lombok in Indonesia, religious groups in the Extreme North Province of Cameroon, or the north and south of Ghana. Too often, people are quick to rule out national level programs because of perceived or real regional differences. However, many of the feeding problems are similar--solutions may or may not be the same. Often, it is the expression of the solution that must vary, but not the concept. These variations can be handled in a national program as long as there is strong regional, district, and village participation.

STRATEGY FORMULATION AND IMPLEMENTATION³

Strategy Framework for Behavior Change

As key concepts and behaviors were clarified by the research in each country, the required strategies were formulated easily. By comparing ideal and real behaviors, and what families indicated they can and will change, and then by examining resistances and enabling factors, planners could lay out the strategy or road map for how to achieve the behavior changes, whether they are:

- increasing the frequency of feeding;
- adding malt to the child's porridge; or
- having men stop purchasing infant formula.

In the first two country programs, Indonesia and Cameroon, the strategy formulation was done only for a communication component, following the wishes of the host-country agencies. However, it was clear from these experiences that the project had to include other actions if all behavioral issues were to be addressed. In the other country projects, the formative research assessment results were used to write two strategies. The first strategy was the general program strategy, i.e. what activities must be in place to support change at the household level. The second strategy, a part of the first, was the communication strategy.

Without providing a template for program strategy formulation, each country defined similar areas requiring attention. While the project teams organized the information from the assessments, the overall strategies were designed at workshops with program managers and policy-makers representing key programs related to child health and nutrition. These workshops were successful in heightening awareness of young child feeding problems and in achieving a commitment to action, even if only a skeleton program.

The framework that commonly emerged contained the following areas for action:

- legislation/regulation
- training
- communication, focusing on practices
- food product or ingredient
- other child care, sanitation, bowl to measure food quantities.

Examples of country project activities under each category show that although the framework was consistent across projects, the activities varied within the categories.

³ Much of the content of this chapter is taken from a speech given by M. Griffiths, "Defining Concepts and Strategies to Improve Young Child Feeding" at the 25th Meeting of the Society for Nutrition Education, Washington, DC, July 1992.

- Legislation: In Ecuador and Swaziland, because the widespread availability of milks and formulas were a deterrent to optimal breastfeeding, importance was placed on making the Code for the Marketing of Breast Milk Substitutes a law. But in Cameroon, given the remoteness and small size of the project area in the Extreme North Province, legislation did not make much sense.
- Training: In many countries, there were ongoing, large, pre-service and in-service training schemes with which the project tried to coordinate. However, the need for special training efforts emerged clearly from the research and from discussions with managers of ongoing training programs. Examples of TWP special training efforts were:
 - in Indonesia, a short course on child feeding for representatives of the national women's association because of their role in community programs;
 - the orientation planned and conducted for selected small shop owners in Indonesia because they are convenient, are visited frequently, and often give or could give advice on child feeding;
 - the orientation on child feeding for community development (not health) workers in Cameroon, because they are the most frequent visitors to distant villages in the extreme north;
 - the in-service training for nurses in Swaziland, because they are well respected and were conveyed much misinformation on child feeding; and
 - the extensive training on counseling techniques across all project and all medical personnel because they are important sellers of the "product" (optimal weaning practices) and they need the skills to be good spokespeople.
- Communication: Each program included two aspects--promotion of the local project and education on the basic practices. (See below for details.)
- Food product or ingredient: Here, emphasis was given to the greatest need: how to improve the common homemade food(s).
 - In Indonesia, rice porridge was used as a basis--rice rather than rice flour was stressed plus the addition of common (every day, household ingredients) like *tahu*, green leaves and a source of fat. The recipe was flexible to accommodate a variety of possibilities--examples were given using already cooked foods and raw foods to be cooked. The name Nasi Tim Bayi was chosen to identify this good infant food because it conveyed that it was soft rice mixed with other ingredients for the baby.
 - In Cameroon, the problem was that *bouille* given to children was not calorically dense. Enriched *bouille* was promoted--made thicker and with the addition of

milk, egg, or peanut paste. For older children, the use of the adult food required much convincing and proper preparation for a child before it would be considered for a child.

- In Swaziland, the key problem was that mothers felt the family's corn porridge was too thick for the child to swallow and digest so they diluted it tremendously. Therefore, malt was introduced to thin the thick porridge without reducing its caloric density.
- Otherwise, traditional Swazi foods were promoted. The project logo was the large iron cooking pot in every Swazi household signifying that corn porridge was fine for children.
- In Ecuador, in the highlands, the caloric and nutrient-poor regular diet did not lend itself to minor modification. The project promoted a special *machica* called *fuersan*--toasted legume and grain mixture that is traditional but usually not for children. For other areas, regular family food was promoted, usually based on rice or noodles and emphasizing the semi-solid, not the water or soup.

Other activities:

- In Swaziland, a key complaint of working women was the poor nutritional care offered by child caretakers. Therefore, the project aligned itself with existing day care providers to upgrade their knowledge. The project also encouraged the creation of more day care centers.
- Also in Swaziland, food hygiene was consistently blamed for childhood illness. Often mothers felt the food itself caused the illness. Hygiene became a priority. A food preparation unit was added to the hygiene education materials being developed in another project, and all child feeding materials contained key advice on hygiene.
- Because of mothers' lack of the concept of food quantity in both Swaziland and Ecuador, the manufacture of calibrated child feeding bowls to measure food quantities against the necessary intake per meal was proposed.

Communication for Behavior Change

The communication component dominated each country project because it directly and fully addressed the concepts related to practices.

The major challenge that confronted the planners of this component was how to get out the message about the specific behavior changes in a manner that was precise, targeted to the person in need, when they needed it.

Communication strategy planning began with decisions on audience. Generally, the primary audience was mothers/principal caretakers because they are the ones who prepare the food and feed the child. However, the secondary audience of influencers (fathers, children's grandmothers, other family members) were considered virtually as important as the primary audience. The tertiary audience were those influencers one step removed from the family--key community leaders, health care workers--both traditional and non-traditional and vendors of prepared or of special ingredients for young children's food. Communications for this tertiary audience should not be confused with training. Although they were oriented or trained, a segment of the communication program was developed especially for them.

Critical to the success of the communications is segmentation within the audiences. For example, among mothers/families it was recognized that the concerns and practices of mothers with newborn infants are much different from those of mothers with children in the second year of life. Therefore, the audience of mothers was segmented according to the results of the research, but usually along these lines:

- pregnant women (preparation for infant feeding)
- mothers of infants 0-4 months old
- mothers of infants 5-6 months old
- mothers of infants 7-9 or 7-12 months old
- mothers of infants 10-18 or 12-18 months old
- mothers of infants 19-24 or 19-36 months old

Overall the communication strategy was conceptualized (as stated in the Indonesia strategy document) to:

1. "Introduce a 'product', good and proper weaning practices, that are superior and fulfill the needs of parents."
2. "Create consumer acceptance for good and proper weaning practices by promoting them through credible sources with good coverage and frequency of contact."
3. "'Outsell' the competition, old attitudes and practices related to infant and child feeding, by improving knowledge and the self-confidence of mothers in their ability to change."

As for the media strategy, the goals were to reach: (1) the houses of families with young children with limited resources; and parents outside the house with messages that focus on specific behavior changes; and (2) to other family members and the society more generally on enhancing the importance of child feeding and on a few more generic principles of child feeding. The media used varied tremendously--from the Cameroon project that relied exclusively on community workers--to Ecuador, where mass media (radio and television) played a major role.

The materials that were created to fulfill the planned media strategies also varied greatly depending on local creative talent and budget. In almost every case, materials were done in local

language and the national language, if different. Following is a brief overview of the types of materials created.

1. Focus on specific behavior changes.

- *Counseling cards to aid village or health workers target their messages.* These were developed in every project. In every project, they were to be used with a growth monitoring program, although workers were also trained in how to use them in the absence of growth monitoring. The counseling card sets were divided by the age of the child and with the exception of Indonesia by whether or not the child was healthy, sick or not growing properly. Some countries added special cards that addressed their particular problems. Swaziland, for example, added counseling cards on the initiation of breastfeeding and on household hygiene. In Indonesia, there were special cards for women working for remuneration outside and inside the home. (The mothers of the least-nourished children in the Indonesia research sample worked at home.)
- *Reminder sheets for the family and health worker.* These are sheets used in counseling but which remain with the family. In Cameroon, they were mimeographed copies of the counseling card. In Indonesia, the reminder sheet was more elaborate. It contained the entire framework for feeding by month and served as a check list for the community worker at the growth monitoring session. It was kept by the mother in between visits, folded in the growth chart. (These sheets were reproduced for a health program in the eleven high priority provinces of Indonesia when the project ended.)
- *Radio spots and cassettes were made on key behavior changes.* Radio spots were used in Swaziland, Ecuador, and to a limited extent in Indonesia. Generally, they were in a dialogue format. In Indonesia, a standard character, Ibu Gizi (Mrs. Nutrition) was created to be the voice of wisdom. In Ecuador, the spots were always two mothers conversing. The dialogues for radio in Indonesia were also put on cassette and were played at weighing sessions and in the village at meetings.
- *Posters* were prepared by all projects except Swaziland. In each case, posters were used for specific purposes. For example, the posters created in Ecuador were for (1) maternity hospitals reminding women about early initiation and on-demand breastfeeding; and (2) health centers and doctors' offices to remind families about feeding sick and recuperating children.
- *Food demonstrations and demonstration guides* were prepared in most projects. Indonesia and Ecuador were the only projects to prepare formal recipe-type guides.

2. Focus on the image of young child feeding, general principles, and project promotion.

- *Name, logo and song:* Local names for each project were selected, plus logos in Indonesia and Swaziland. In every country but Cameroon (where there were no audio materials prepared), a project song was created.

The project names generally were related to improving young child feeding. In Ecuador, the project was called *Mejor Comienzo* (Best Beginning).

In Indonesia, the logo was a replication of the one developed by the project at Manoff International and in the case of Swaziland, the three-legged pot that symbolizes the Swazi staple food, corn porridge was used.

The project music was all original. In Indonesia, the song was an uplifting, marching-type song, the words sung by a children's chorus. In Swaziland, the song was done using a traditional music form, the Umboloho and was sung by a small male group of singers. In Ecuador, two songs were recorded, a lullaby about breastfeeding and a rhyming song about infant feeding through the first two years of life.

- *Television* was used only in Ecuador. There was a documentary on the importance of child feeding and proper practices at various ages. There were also video clips, one for each song prepared.
- *Flip charts* were developed in Cameroon and Swaziland. In both settings, there was a need for an educational materials that were simple and versatile. In Swaziland, the flip chart was used by all community-based agencies including *tingkundtla* the traditional Swazi government system. In both the Swazi and Cameroonian projects, flip chart the actions of men were stressed because women complained of their lack of support and men, themselves, said they could pay more attention to child feeding and use family resources more wisely.
- *Cassettes* prepared in Swaziland and Indonesia discussed infant feeding generally, particularly family and community behavior. The tapes in Swaziland were made to be used in *shibens*, gathering places of men. In Indonesia, the cassettes made for the community-at-large were done in dialogue form with *Ibu Gizi* (Mrs. Nutrition) as the spokesperson, the one who could solve child feeding dilemmas. These dialogues were interspersed with popular songs. These cassettes were played at community gatherings. There was a report of them even being used at weddings because of the popular music that was interspersed with the dialogue.
- Other items such as a supplement in the Sunday edition of the most-read newspaper and a special book for parents with a newborn were developed in Ecuador. And, a play on child feeding and the role of the father was written and produced in Swaziland.

The materials to promote young child feeding and to motivate behavior change were varied-- there was no model. However, the process to make decisions about them was more standardized. These programs were not ad hoc collections of materials, but instead were based on carefully planned strategies.

Overview of Project Implementation

Just as strategies and communications materials varied among country programs, so did program implementation. Unfortunately, because two of the countries to begin activities early (Peru and Zaire) were not able to sustain them, the two countries (Ecuador and Swaziland) plus Ghana which joined The Weaning Project later were unable to get much implementation, therefore, experience before the end of the A.I.D. centrally-funded project. The commonalities in implementation are drawn primarily from Indonesia and Cameroon and the initial activities of Swaziland and Ecuador. The comments on implementation cover (1) project scale; (2) use of private sector resources; (3) inter-institutional collaboration; (4) training; and (5) monitoring systems.

The Weaning Project design called for demonstration projects. Hence, those initiated early on were just that. In Indonesia, two districts were chosen to pilot activities that then could be used by the National Family Nutrition Improvement Program. The districts were one each in the provinces of East Java and West Nusatenggara. In Cameroon, the project area was even more circumscribed, in part due to CARE's limited project area in the Extreme North Province. Here the project was to demonstrate to CARE and the Ministry of Community Development just how child feeding concerns could be integrated into on-going non-nutrition oriented programs.

When the opportunities to work in Swaziland, Ecuador, and Ghana were presented, because of the size of the country (Swaziland) and the nature of the programs into which TWP was fitting (Ecuador) it did not make sense to work regionally but instead to develop an assessment and strategy for a national program. This transition from regional demonstration projects to national programs was an important change for TWP and for child feeding programming more generally. The lesson is that these programs can be done nationally, in spite of extensive cultural differences.

Execution of project strategies in all countries involved public-private or NGO-private sector alliances. While these alliances took different forms (some legally binding, competitively bid contracts; others, goodwill gestures on the part of local artists) almost all of the communications materials were produced by local, creative talent in the private sector. Swaziland is the country where this was accomplished least formally, with local artists participating only in formulating the strategy, offering ideas on materials and producing a play. In fact, all graphics and radio spots were ultimately produced by the Ministry of Agriculture. In other countries, there were joint efforts between health education units and private sector companies, while in others there was complete reliance on private sector firms. These arrangements, generally, were successful but not without problems. Important training was done with project colleagues on how to manage these contracts with private firms and training was done with the private firms on work with public sector agencies on this type of behavior change oriented program with an audience comprised of families with limited resources.

In each country, implementation was inter-institutional. Implementing partners included the Department of Women's Affairs, NGO alliances, Departments of Community Development, a Ministry of Religious Affairs (Indonesia), a Ministry of Traditional Government (Swaziland), the

Social Security System (Ecuador), and Ministries of Education. While inter-institutional collaboration can be problematic, the experience in TWP was that other institutions were willing to collaborate, to use materials, and to carry out activities when those activities were designed with them and tailored to their program's needs.

The first step of project implementation in each country was training. Generally, this was in-service, project-specific training/orientation. Ecuador and Swaziland were the only projects that attempted to influence pre-service education of medical professionals. The in-service training offered by the country projects was extensive and covered four topics: (1) new concepts in infant and young child feeding; (2) the relationship of these concepts to current local practices; (3) the role of the trainee in improving the situation vis-a-vis the project and its strategy; and (4) how best to communicate with mothers. The types of workers trained by the project ranged from health center physicians and regional home economist supervisors to traditional birth attendants, local shop owners, and community religious leaders.

Part of the implementation of each country program was a monitoring system. Indonesia and Cameroon were the only countries to actually execute a monitoring program. The monitoring program involved a qualitative review of the program every month and a more rigorous review that included interviews with families after six months of implementation. This six month monitoring proved critical to mid-course corrections and to determining the activities that were having the most impact so they could be reinforced and others discontinued, if necessary. In the case of both Indonesia and Cameroon, more in-service training was done as a result of the six month project review.

EVALUATION OF PROJECT OPERATIONS

Improving Infant and Young Child Feeding Practices

One of the goals of the demonstration projects was to be the improvement of infant and young child feeding practices. Because of the late start of the Ecuador and Swaziland projects evaluation of these efforts could not be undertaken. However, both Indonesia and Cameroon were evaluated after about one year of operation.

The evaluation framework that was used was developed after holding a special meeting with evaluation experts who thoroughly reviewed each project's goals and their implementation plans. The conceptual framework that guided the TWP impact evaluation follows the chain of events or causal influences that are believed to affect behaviors of concern to the project. The different variable domains in the conceptual framework (i.e. links in the chain) that were studied in the impact evaluations are:

1. socio-demographic characteristics
2. program membership (resides or does not reside in a program area)
3. program exposure
4. provider's knowledge and behavior
5. mother's knowledge of age-specific feeding practices and her child's feeding behavior
6. child's health status (morbidity) and dietary intake
7. child's nutritional status.

Both the Cameroon and Indonesia evaluations hold out the hope of the potential for significant improvements in practices and nutritional status when this approach to project development is applied well, even in difficult areas such as the Extreme North Province of Cameroon which is isolated and resource poor. Briefly, the evaluations of the two projects are summarized below:

- Cameroon: "The evaluation suggests that The Weaning Project has developed a potentially effective strategy of nutrition education for illiterate, hard-to-reach sub-Saharan African populations. Despite the difficult circumstances under which this project was undertaken and scrutinized (an impact evaluation after only six months to one year of operation), the project demonstrated gains in coverage and frequency of participation, as well as some improvement in maternal knowledge and minimal improvements in a few feeding practices." (1)

- Indonesia: "The 1989 evaluation survey found that the Indonesian Weaning Project had improved mothers' and kaders' knowledge of child feeding practices, particularly knowledge of breastfeeding practices, introduction of complementary foods, and appropriate mixed weaning foods. Moreover, through this program involving educational inputs only, a significant impact was observed (relative to comparison sites) in mothers' child feeding practices (especially those in the same areas where knowledge increased), children's calorie intake, and the nutritional status of children."

"These changes were observed after slightly less than one year of program implementation. The Weaning Project messages had a strong impact, despite the fact that contact with the project was not universal and implementation of certain messages was not optimal."(2)

Because the evaluations were major undertakings and the results positive and enlightening, they merit more attention to their details. On the following pages, summaries of both the Cameroon and Indonesia evaluations as report in the project overview reports (1,2) are given.

Cameroon

Methodology

The impact evaluation consists of a baseline survey, which was implemented in January 1988, and a follow-up survey carried out in March 1989. Tulane University was contracted to oversee the basic design and analysis of the evaluation. The intent was to measure improvements in mothers' knowledge, attitudes, and practices related to project messages, as well as their children's diet and nutritional status; and given changes in these and other indicators, attribute the change to the social marketing program.

The impact evaluation was carried out in the Mayo Tsanaga region. The study was limited to villages belonging to the Foulfoulde, Mafa and Kapsiki language/ethnic groups, which are the largest in the area. It was necessary to restrict the study because resources, language and time constraints would not permit inclusion of all groups. The sample size and design were also restricted by financial and time constraints, and the lack of an adequate sampling frame from which to work: no accurate list of the CARE villages with wells was available, nor were there any up-to-date census data.

The study population consists of three major village groups: the "old" treatment group of eleven villages in which some CARE health activities had already taken place prior to the baseline; the "new" treatment group of five villages that were to begin the CARE health program, including the weaning component, during 1988; and, the seven comparison villages that were eligible for CARE's program but were not expected to be added during 1988.

Household surveys were conducted in each village. During the baseline, this included 311 mother/child pairs in "old" villages, 199 mother/child pairs in the "new" villages, and 302 mother/child pairs in control villages. During the follow-up survey, 305 mother/child pairs were

studied in the "old" villages, 158 in the "new" ones, and 306 in the comparison sites. All women in a household having children under three years old were to be interviewed. The data are cross-sectional, there was no cohort sample among the mother/child pairs.

Major Baseline Results

The baseline survey noted that the three groups (old, new and comparison) were comparable on many, but not all measures. The "old" treatment group appeared to be slightly better off economically than the other two groups. Overall, the "old" treatment group had a significantly higher score than did the other two in terms of mothers' knowledge, practices and attitudes on weaning. As regards access to nutrition information, mothers in the "old" treatment group had had more exposure because many of them had attended CARE or other agencies' nutrition education sessions. Also, children in "old" villages were more likely to have consumed enriched porridge and boule/sauce than those in the other two groups. These results then showed the "new" and comparison villages to be more similar and less exposed than the "old" ones.

Post-Intervention Survey Methodology

The survey methodology and sample was essentially the same for both the baseline and the post-intervention survey. However, because of financial and other constraints, a few changes had to be made in the follow-up survey. The household questionnaire was modified slightly; a few questions were changed to make them clearer, and a few were eliminated since they had not provided useful information at the time of the baseline analysis. Because time was limited during the evaluation phase, a larger team of interviewers was used. This large team may have contributed to some of the "noise" (inaccuracies) that characterizes the evaluation data. During analysis, it was necessary to eliminate data gathered in one of the "new" village sites, since CARE weaning activities had never been undertaken there. Thus, the sample size for the "new" village treatment group was smaller than anticipated.

Evaluation Results

The 1989 post-intervention survey found that the Cameroon Project improved coverage and frequency of participation of mothers in nutrition-related activities as well as improved maternal knowledge, though improvements in feeding practices were minimal.

1. **Program Exposure:** A large percentage of program participants became relatively regular attendees of nutrition education sessions, particularly in villages where there was no CARE health component prior to initiation of The Weaning Project. Over time, more mothers considered the village health care workers to be a source of information on child feeding, which may be a result of the upgraded knowledge and communication skills of CARE health workers.

All program villages showed increased exposure to nutrition information since the baseline survey. Gains were particularly high in "new" treatment villages where the percentages participating in growth monitoring increased from 13.4% to 44.3% within

the timespan of six months. Almost 37% of mothers in the "new" villages had received individual counseling. The number of mothers attending nutrition education sessions increased more than eight-fold to almost 90%. The majority of women who attended group sessions indicated that they attended almost all the sessions. Mothers' recall of program messages was high, particularly in the "new" villages.

2. **Knowledge:** Modest knowledge gains in program villages are indicated by the evaluation. Gains become more marked when mothers in treatment villages are classified according to whether or not they were exposed to the program. As expected, knowledge gains are associated with the intensity of program exposure. Notable achievements are particularly evident among mothers who received one-to-one counseling. These mothers scored nearly as high in nutritional knowledge as those exposed to all program elements. The areas where the highest knowledge gains were made are: recognition that the early use of water will not quell hunger, feeding a child more after illness, and how to tell if a child is growing.

The group with the highest significant knowledge change is the "new" CARE communities. Baseline knowledge scores were higher among exposed mothers in the "old" treatment group than the other two groups. The follow-up survey shows that knowledge scores increased for each of the three groups but the differences between baseline and follow-up surveys were similar for the old and control groups but much greater for the 'new' treatment group.

It is important to note that in a relatively short period (approximately six to nine months) that the "new" villages were exposed to the program, mothers were able to "catch-up" to their peers in the "old" villages.

3. **Practices:** Statistically significant gains were found in the percentage of mothers giving their children enriched porridge and fruits in the "new" villages. Small and non-significant gains were noted for four of the six practices variables in the "old" health care villages. The 24-hour qualitative dietary recall data are consistent with this pattern; however, no differences are statistically significant or large enough to suggest a major impact on practices. The data suggest slight increases in enriched porridge and boulesauce consumption in the "new" villages.

Discussion of Evaluation Results

The evaluation suggests that TWP has developed a potentially effective strategy of nutrition education for illiterate, hard-to-reach sub-Saharan African populations. Despite the difficult circumstances under which this project was undertaken and scrutinized (an impact evaluation after only six months to one year of operation), the project demonstrated gains in coverage and frequency of participation, as well as some improvement in maternal knowledge and minimal improvement in a few feeding practices.

On a positive note, mothers in the project intervention sites have come to recognize and appreciate the nutrition education activities. Many come to the different sessions despite a heavy work schedule in the field and home. In particular, the project has had an impact upon mothers' participation in the growth monitoring sessions. CARE staff report that large numbers of mothers are returning to the regular monthly sessions. Many mothers are buying and keeping the growth chart. The counseling sessions appear to be a strong factor in motivating mothers to wait for the individual interview and ask questions about their babies' weight. The evaluation indicated that having been exposed to individual counseling was a significant predictor of overall gains in maternal knowledge.

That weaning practices did not appear to be influenced demonstrably by the program is not surprising. Mothers in the "old" villages had consistently better overall adjusted nutritional practices scores than those in the comparison villages but these differences were not statistically significant. Among the statistically differences in specific practices between survey rounds, there was young children. Given the short period of implementation, it is not surprising that practice changes were not more dramatic. It is also predictable that the "old" treatment group would demonstrate more across the board behavioral change before the "new" treatment group just because mothers in the "old" group have had more exposure to the CWP and CARE's former nutrition education program.

Finally, there are methodological factors that play a role in attenuating the results of this evaluation. As had been mentioned elsewhere, the study was undertaken under severe financial and human resource constraints. Most aspects of the design and implementation of the impact evaluation were compromised because of these limitations, including sample size, interviewer training and supervision, and data editing. On top of this is added the difficulty of undertaking survey research in the Northern Cameroon setting. The profound illiteracy and multiple unwritten languages greatly increased the amount of survey error and imprecision.

Indonesia

Methodology

The evaluation was designed as two cross-sectional surveys (a pre/post-test design) among project and comparison groups of mothers and kaders (community health and nutrition workers) in three program and three comparison subdistricts in East Java and NTB. An additional feature was a cohort study in which a subsample of children under nine months of age at the time of the baseline were revisited during the post-intervention survey. Comparison districts were matched demographically and socio-economically with project districts according to the following characteristics: total population, degree of urbanization, ethnic composition, and level of UPGK (the national nutrition program) and health program implementation. Both the comparison and program villages or subvillage units (in NTB) were randomly selected. Within these villages, all children were registered and households were selected randomly just prior to interviewing. A total of 780 mothers with children 0-2 years of age were interviewed. Of these, 143 comprised the cohort subsample. Two hundred forty kaders participated in the evaluation.

Results

Socio-demographic Characteristics

A variety of socio-demographic information was collected in the project and the comparison sites to allow evaluators to describe the population and to look for particular characteristics in either project or comparison groups that could skew the results. Although comparisons were made between groups and sites on some 33 different SES (socio-economic) measures, the evaluation analysts made a composite SES score that was used in the rest of the analysis. On this composite SES score the program and comparison groups do not differ although there are some site specific differences.

Using eleven measures of women's access and participation in community activities a community participation composite score was drawn. There was no significant difference between program and comparison groups on this score.

The mean age of the sample of children was 14.4 months, reflecting a slight bias towards older children because of the inclusion of the cohort sample. Significant differences in the age of children were not found between sites. Likewise, the percentage of children experiencing some illness the day before the interview (33 percent) was the same between program and comparison groups as was the rate of morbidity in the last month.

Program Exposure

Within the project (PMPA) areas, over 50 percent of the mothers correctly recalled the contents of at least one Weaning Project material such as a poster, a cassette or radio spot, the recipe leaflet, or the feeding schedule. Another 25 percent reported having seen a program material but were unable to give a correct description of the material.

In addition to mass media educational materials, the kaders had an important role in disseminating PMPA messages. More mothers in the PMPA areas (than in comparison areas) reported receiving information from their kader both in general and at the last weighing session. In PMPA areas, the mothers' perception of the kaders as an important source of information on child feeding was higher as well, corresponding with the Weaning Project messages urging mothers to consult with their kader about their child feeding questions.

Kaders also reported giving information about child feeding and health to mothers significantly more often than their comparison counterparts. Whether kaders lived in a PMPA area was a strong predictor of the frequency with which they carried out educational activities the amount of supervision, the length of time the kader had worked as a kader, and the number of hours worked every week.

Knowledge

Knowledge about weaning practices among kaders in the PMPA areas was significantly higher than knowledge among kaders in the comparison area. Thus, not only were the PMPA kaders giving significantly more advice to mothers, but the advice they were giving was of better quality. Whether or not kaders lived in a program area was the first predictor of their child feeding knowledge. Other important predictors were socioeconomic status, hours spent working as a kader, and whether or not the kader reported giving advice on infant health and feeding to mothers.

Mothers' knowledge about Weaning Project messages for infants 0-9 months of age was significantly higher in the PMPA areas than in the comparison areas. This included knowledge about the introduction, frequency of feeding, and ingredients of weaning foods, as well as the importance of giving only breast milk in the first four months of life. Maternal knowledge of feeding practices for older children was not as good as for the younger children. The program placed less emphasis on them and, for those messages that were included, it seems that the kaders used them less. Using a 15 and 13 item composite knowledge score, differences were significant between project and comparison groups. PMPA mothers' knowledge increased significantly between the baseline and final evaluation survey. The mother's residence in a PMPA area as well as the number of PMPA program materials she could correctly recall were significantly linked to higher knowledge scores. Other determinants of knowledge were contact with the kader and attendance at the posyandu.

Practices

Mothers' child feeding practices were influenced by exposure to the program and by the weaning subtopics in which mothers' knowledge gains were highest. However, behavioral changes were harder to identify. Mothers who had a correct recall of program materials (those mothers whose exposure to the program was verified), showed significant behavior changes (compared to those mothers unexposed to the program) in the following areas: giving colostrum, introducing foods later, preparing a special food for their child, and correctly preparing and giving the mixed weaning food, Nasi Tim Bayi. (This latter practice was corroborated by observation when possible.) The only change in practice noted for older children was that in the project area, they were receiving a greater variety of foods than their counterparts in the comparison areas.

Diet

Percent calorie and protein adequacy from the recommended allowances were compared between the PMPA and comparison groups. In the six to nine month old and the 25 months and older age ranges, caloric adequacy in the PMPA groups was significantly higher. This significant difference in the six to nine month olds correlates well with the areas of major gains in knowledge and practice improvements, confirming that the weaning messages had been clearly understood by mothers in the PMPA areas. The higher caloric intake in the older children is a function of the cohort. The project cohort sample received 79.5 percent of their caloric requirement while the comparisons cohort received 69.6 percent ($p=.02$). Higher weaning knowledge scores and contact with The Weaning Project were highly correlated with higher percent adequacy of recommended calorie intake.

Nutritional Status

The impact on growth was not expected to be large, given the relatively short implementation period. Analysis of the weight and height data show that The Weaning Project did have a significant impact on the nutritional status (both weight-for-age and height-for-age) of children in the PMPA area. However, this impact was small and did not delay the alarming growth faltering among children beginning around five or six months of age. Regressions showed that after age, caloric adequacy (in itself positively correlated to knowledge and exposure to the program), socioeconomic status, ethnic group, and whether or not the mother was exposed to the program had a determining impact on the child's weight. Similarly, exposure to the program was found to influence height-for-age after age and socioeconomic status had been controlled for.

Kader

The program kader had a greater propensity to educate mothers and had better information with which to complete the task. On a composite Educator Score that included giving advice at community meetings, at the *posyandu* education table, and/or at *posyandu* and at UPGK activities outside *posyandu*, program kader scored dramatically better. For example, 83.6 percent of PMPA kader versus 38.6 percent of comparison kader said they offered nutrition education at community meetings. Higher supervision levels were associated with increasing time kaders spent teaching mothers.

On a composite knowledge score on 13 questions, the two kader groups score similarly on the baseline survey (51 versus 53 percent correct responses, PMPA and comparison group, respectively). At the time of the follow-up survey, both groups showed improvement but the PMPA group did significantly better (81.1 versus 64 percent correct responses).

Discussion of Evaluation Results

Besides these "impact" findings, the evaluation is replete with information on the extent and success of communication through various media. For example, the influence of the kaders is clear, although the reinforcement of several media was very important. A very provocative finding is the positive impact on mothers of merely living in the project area. KAP improvements in the project area were seen even among mothers who claimed not to recall exposure to project messages. This could be an indication of the "socialization" of new practices through daily observation and conversation that all health education programs seek as a long-term goal.

Overall, the hypotheses set out at the beginning of the evaluation were confirmed. The program appears to have improved mothers' knowledge about infant feeding, positively changed practices, contributed to better diets being offered and consumed by young children and has led to improved nutritional status albeit, moderate.

Building A Sustainable Country Program

One measure that is used to evaluate the value of technical assistance provided, apart from the success of the project in improving practices or health indicators is whether or not sufficient skills have been transferred and a constituency nurtured in-country to carry on the project in a dynamic and effective manner after the completion of the technical assistance. In this regard, The Weaning Project probably exceeded expectations. The project as designed by A.I.D. did not emphasize building local capacity but instead emphasized demonstrating how to improve practices. However, from the outset the project staff and host-country colleagues structured it to build a concern for young child feeding with country nutrition programs.

At the time the project ended in October 1989 the record was excellent. In fact, reviewing the projects a year or more after the project ended, the record still stands, although somewhat altered from its 1989 status. Briefly the status of TWP country projects:

Cameroon: CARE/Cameroon continues the efforts. CARE and their TWP project director are playing a lead role in a World Bank loan project to Cameroon which will expand The Weaning Project to several new provinces using the methodology learned while working with TWP. The TWP project collaborator in the Center for Nutrition Institute for Medical Research, has a grant from the African Development Fund to replicate TWP in an area deemed high priority because of its high rates of child undernutrition. She was being "tutored" by a consultant to TWP in Ghana.

Indonesia: At least in East Java, the provincial office continues some of the activities of TWP. One of the materials (the Child Feeding Schedule and Counseling Sheet) has been reproduced as part of a package for Indonesia's neighborhood integrated health service delivery posts (posyandu). The Nutrition Division has adopted a social marketing methodology for the development of several of their major, new initiatives and a member of the TWP country working group plays a leading role in these activities. Concepts and methods developed during TWP continue to be expanded to new provinces and used in the national Family Nutrition Improvement Program.

Swaziland. The project continues under the leadership of the Ministry of Agriculture. UNICEF continues their support and funding from other donors has been sought to complete other elements of the strategy left unfinished, such as the marketing of malt. The project director offers assistance to other projects in Swaziland similar in to nature to TWP.

Ecuador: The project also continues, albeit through a local NGO rather than the government because the project working group left the Ministry and joined an NGO. The project director from the Ecuador TWP provides technical assistance, both inside and outside of Ecuador on projects of a similar nature to TWP. In fact, the Manoff Group TWP project director and the Ecuador project director shared the provision of technical assistance to a young child feeding project in Chile from 1989-1991. Government efforts have incorporated many TWP concepts, but apparently they have not continued to use most of the materials citing the cost of radio and television time as a major deterrent.

This is a project that not only had impact in the short-run but continues to have impact and to grow, both through the project activities themselves, and the people who formed a part of each country working group.

CONCLUSIONS AND RECOMMENDATIONS

The major conclusion from The Weaning Project experience is that improving infant and young child feeding practices is possible and that when accomplished, it can have a measurable effect on nutritional status. Improving practices should be the basic and first approach of all programs for countries where there is not a food shortage. Enough is known now to offer a streamlined assessment package, and even more appealing to program managers and policy-makers, a strategy matrix that can be used to give specific ideas about what can and should be done to build a comprehensive program. Review of the strategy matrix provides an activity menu for those serious about young child undernutrition and the role of practices in that undernutrition. Following is the strategy matrix:

STRATEGY FRAMEWORK FOR YOUNG CHILD FEEDING PROGRAMS

| Legislation/ Norms | Communication | Training | Products | Other |
|--|--|--|--|-----------------------------|
| !Code of Marketing of Breast Milk Substitutes !Monitoring of marketing infant foods !Norms concerning infant and young child feeding | !Change image of child feeding (advocacy) !Promote assistance of "influencers" !Communicate specific behavior changes for individual situations !Promote project and project products | !Curriculum changes for pre-service education of health care "professionals" !In-service training: concepts of child feeding and how to counsel mothers !Orientation for community leaders and traditional health care providers | !Improved homemade foods !Prepackage food !Food ingredient, i.e. malt !Child feeding bowl !Clothes for breastfeeding in public | !Hygiene !Child care |

While the strategy, the communications materials, and the ideas such as the use of malt and a bowl to measure food quantities are useful to other programs, another conclusion from TWP experience is that the product should not supplant process. This project was very much about process and the tailoring of activities to address local need. In this process, the formative research assessment was crucial. Over the three generations of TWP country programs, the protocol was modified, and what can be offered now is a relatively quick, relatively inexpensive research methodology that can be carried out with local expertise and that offers in-depth insights that are immediately applicable to program plans. This technology helps to "de-mystify" child feeding because it makes priorities clear. The sense that program planners of child feeding being too complex to address disappears.

This project illustrates that a great deal can be achieved by beginning with what people have before introducing special food products. The program foundation uses what most consumers have access to and address the most prevalent need (doing better with common household foods). Then, as other needs are articulated (for example, an instant food for working mothers), products can be sought and tailored to meet those needs--not the other way around.

Tailoring the project to address behavior changes from the outset was crucial to success. The project was guided by the beneficiaries and their practices and what they identified as the potential for change--not what nutrition textbooks or Ministry of Health norms regulated. The strategies were formulated to include activities to facilitate behavior change, and by the end of the project, these went beyond communication activities. But, even in the communication components, the point was not just to convey information on young child feeding, but to convey what was needed to improve practices in a way that it would be meaningful, memorable, and properly reinforced by authorities such as health care providers.

The technical assistance offered seems to have been appropriate for the task. The projects were effective and left a trained staff in place that has continued the work. However, it is important to point out that the transfer of technology or knowledge was not all one-sided. The staff at The Weaning Project benefited tremendously from each association and The Manoff Group continues to have contact with the country project directors in all countries. In addition, The Manoff Group continues its work in young child feeding with USAID., The World Bank, WHO, and several governments. In this way, the work of The Weaning Project also continues.

A key element to the success of the technical assistance was the formation of a partnership with each host-country institution. The project was theirs. All decisions were made jointly. Just as the technical assistance team wanted and had a say in country operations, so host-country colleagues wanted and had a say in technical assistance and how technical assistance should be allocated to benefit them. In each country, every attempt was made, in most cases, successfully, to find direct funding for project activities. This was critical to keeping the partnership on equal footing.

Future projects should:

1. Recognize that the state-of-the-art in young child feeding (weaning) programs has been advanced by this project. There are many details relevant to future country programs contained in the experience of TWP. Opportunities should be sought to disseminate more widely both the process and products of this project. This was begun at the XIV International Nutrition Congress in Seoul, Korea in 1989 when at least one representative of each country project found financing for a trip to Korea where a special symposium session was dedicated to presentations of TWP experiences and a discussion of replicability.
2. By combining this experience with others, it seems clear that the efficacy of this type of demonstration project approach is proven. The challenge is to abandon this demonstration modality and look for opportunities to strengthen national programs,

no matter how weak or how focused on supplementary foods. There is a process and a list of program options that can be presented to a Minister of Health or Planning that will make young child feeding seem more possible than it has before.

3. Talk about improving infant and young child feeding, i.e. combine breastfeeding and weaning together in one strategy. This does not negate having activities that focus on one or the other, but it means that operational decisions will be taken with an eye toward harmonizing practices.
4. Allow time to set up the project properly and to write the proposal that will allow counterparts to obtain funding. In a five-year project, that means country selection must begin immediately, prior to a world-wide cable, if necessary. It also means the donor agency should tolerate low spending levels and few products at the outset.
5. Have a component in the work plan and budget for promotion of the project's ideas and key findings. Although this point has not been stressed, it was a shortcoming of the project. Advocating for improving young child feeding practices was not part of the official effort and suffered, although some advocacy was done outside the project by project staff. There was no budget to reproduce country reports or to disseminate them. Countries did this on their own.
6. Projects of this nature (demonstration), consider structuring country selection to have two or three generations of projects. While not intended in the original project design, The Weaning Project did initiate country projects over a several-year period. This offered the opportunity to learn from mistakes and to refine processes such as the formative/assessment research and the strategy formulation so that a more useful product could be offered to the larger community.

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