

SC-11
ISBN 71720



THE WEANING PROJECT

IMPROVING YOUNG CHILD FEEDING PRACTICES
IN INDONESIA: PROJECT OVERVIEW

March 1991

Nutrition Directorate, Ministry of Health
and
The Manoff Group Inc.

Under contract number : DAN-1010-C-00-4109-00
Agency for International Development
Bureau for Science and Technology/Office of Nutrition
ANE Bureau and USAID/Jakarta

MANOFF GROUP INC.

AUTHOR
Marcia Griffiths

ORGANIZATIONS AND PERSONNEL

Nutrition Directorate, Ministry of Health

Jakarta

Benny Kodyat
Ig. Tarwotjo
Cloetilde Maupun
Suaspendi
Sientje Masoara

Alwi Alhabsyi

Martini

Consultants

Tatong
Indrah

Nutrition Section, East Java

Benny Soegianto
Bambang
Suyatmi
Lies Setyowati

Nutrition Section, NTB

Erian Tarlan
Sulendra
Mustika
Dhany
Khairul

National Family Planning Bureau

Harry Victor Darmokosomo
Soegung
Ratna
Setiawati Arifin
Sofinas

The Manoff Group

Marcia Griffiths
Ellen Piwoz

Consultants

Janet Smith
Cynthia de Windt

Intervista

Nuradi
Felicia Uterodewo

Yayasan Indonesia Sejahtera

Ratna Kurniawati
Jennifer Zeitlin
Sofijandi Wangsamihardja
Bimo

USAID/Jakarta

Joy Riggs Perla
Julie Klement
Sonya Rahardjo
Tuti Suyono

AID/Washington

Chloe O'Gara
Nina Schlossman

Table of Contents

Background and Project Organization	1
The Assessment	4
Strategy Formulation and the Communications Program	12
Implementation, Supervision and Monitoring	19
Evaluation	21
Discussion and Lessons Learned from the Project	26

Exhibits

- A. Poster: "An Important Message from Mrs. Nutrition.."
- B. Inside panel from the leaflet on how to make Nasi Tim Bayi
- C-1. Child Feeding Schedule used in the project
- C-2. Child Feeding Schedule being used nationally
- D. Counselling Cards

TERMINOLOGY

Depkes	Department of Health, Republic of Indonesia
Dukun bayi	traditional birth attendant
Kader	volunteer village health/nutrition workers
Kecamatan	a subdistrict
KMS	Kartu Menuju Sehat or Child Health Card
Pamong	male village leader
Pos yandu	integrated health service delivery post (one per village or neighborhood depending on population density)
Puskesmas	health center at the sub-district level
UPGK	Family Nutrition Improvement Program
Warung	small food stall or store

BACKGROUND AND PROJECT ORGANIZATION

By the mid-1980s, it had become increasingly clear within the nutrition and health communities that young child feeding and associated household practices were a major cause of poor child growth in developing countries. A few pilot projects had shown that it was possible to improve these practices and child growth by enhanced communications efforts. With this in mind, the Office of Nutrition of the United States Agency for International Development, in late 1984, awarded the contract for The Weaning Project to Manoff International Inc. (now The Manoff Group). The contract called for in-depth investigation of young child feeding practices and the design of nutritionally sound, low-cost, and sustainable methods to improve them.

In early 1985, the Nutrition Directorate of the Department of Health of Indonesia requested, through USAID/Jakarta, assistance from The Weaning Project to explore ways to improve young child feeding by enhancing the education component of their national Family Nutrition Improvement Program (UPGK). Weaning Project staff, working with the staff of the Food Consumption Subdirectorates (the unit charged with responsibility for developing programs to improve the food intake of vulnerable groups), formed the Central Working Group (CWG) to coordinate project activities. The first task for the CWG was to find support for project activities that could not be covered by the subdirectorates' budget. A proposal was submitted to several Indonesian groups. Two years of support came from USAID/Jakarta's project with the National Family Planning Board (BKKBN) that encouraged the inclusion of health activities in the family planning program. In the last two years of the project, USAID assistance went directly to the Ministry of Health.

The proposal and a subsequent project plan called for pilot activities in two of the three provinces where BKKBN's Integrated Family Planning/Health Program was functioning, East Java and West Nusa Tenggara (NTB). In each province, activities were to begin in two subdistricts and later be expanded to at least an entire district. Two subdistricts per district were specified, one rural and the other semi-urban, to ensure that the project considered these conditions that can be so different in terms of child feeding. The areas where the project was initiated were:

<u>PROVINCE</u>	<u>DISTRICT</u>	<u>SUBDISTRICT</u>
East Java	Pasuruan	Pandaan (semi-urban) Winongan (rural)
NTB	West Lombok	Cakanegara (semi-urban) Gangga (rural)

Project organization was conceived to foster decentralized decision making concerning implementation while the CWG standardized project development, monitoring and evaluation methods. In each of the provinces, a Provincial Working Group (PWG) was established

under the leadership of the head of the provincial nutrition directorate and with membership from this unit and the provincial BKKBN and health education staffs. District and subdistrict working groups or responsible individuals were named to ensure that implementation plans were tailored to local agendas.

From the outset, project sustainability was a concern. To foster sustainability, an advisory group was created, comprised of members of local development agencies, other directorates of the Ministry of Health and other Ministries. The group met periodically to help with certain project decisions, to learn about particular innovative methods and to assist in disseminating project methods and findings within their own agency or unit.

Project Purposes

The agreement signed with BKKBN/USAID in November 1985, specified the purposes and objectives of the Indonesian Weaning Project (known as PMPA, the Indonesian acronym). The purposes as written by the Central Working Group were:

- to contribute to the reduction in the infant mortality rate through improvements in the nutritional status of infants and young children, thereby furthering the goal of the Government of Indonesia (GOI) to promote the reality of a small and prosperous family; and
- to produce descriptions of weaning practices, the variables influencing the practices, and the potential for changing detrimental practices in East Java and NTB as illustrations for other provinces of the type of information and analysis needed to formulate program strategies; and
- to formulate, implement, and evaluate province-specific educational strategies for improving weaning practices in East Java and NTB.

The project achieved its purpose. This report describes the process of planning and implementation to provide the reader with a sense of the outcome of the pilot effort, and what made this project successful. Below is a brief synopsis of the phases followed by a detailed accounting in subsequent sections of this report.

Synopsis of Project Phases

- **Assessment:** November 1985 - October 1986

Research (primarily qualitative in nature) was undertaken to assess the local situation to better understand the client populations. Research methods included focussed group discussions, in-depth interviews, dietary food recalls, structured observations, morbidity recalls, trials of new practices, and ethnographic assessments. Research focussed on weaning practices, reasons for these behaviors, mothers' beliefs as well as their knowledge of child nutrition, and the

potential for improving certain feeding practices. Based on an analysis of the data collected, new or modified practices were suggested and then tried with mothers. The results of the trials were analyzed to provide specific recommendations for the design of the educational strategy.

- Strategy formulation, materials design and production, and preparation for launch:
November 1986 - February 1988

Based on the results of the assessment phase, behavior change objectives were set and an overall communication strategy developed. The strategy included identification of major concepts, channels of communications to be used (media), materials to be developed, and a schedule and budget for implementation. Once the strategy was agreed upon, a local advertising agency was contracted to assist in designing, pretesting and producing the materials.

- Implementation: March 1988 - December 1989
(Monitoring study: August 1988)

This phase began with training activities for health workers, shopkeepers, women's group representatives, religious leaders, midwives, and village officials. Educational activities were implemented in the field, following a predetermined schedule. Supervision and in-process monitoring took place on a regular basis. Based on the results of the monitoring, revisions were made as needed during project implementation.

- Evaluation
Baseline Survey: July - August 1987
Follow-up Survey: February 1989

The design of the evaluation was for pre and post measures of mothers' knowledge and practices and their infants' calorie and protein intake and nutritional status in a program and comparison sample. A cohort study was also done: children under nine months of age at the time of the baseline were revisited during the follow-up survey. This phase began with a baseline survey of 780 mothers with children under 24 months. It took place before the training and the launch of the communications. A repeat survey of all variables measured by the baseline was done after approximately one year of project activities.

While evaluation was the final phase in the original project plan, when the project was extended from three to four years, an additional phase was added to allow for the review and revision of the pilot project products and their expansion to new areas in the same district or in the same province. This phase was called Area Development and began in late 1988 with funding through December 1989.

Obviously, the project did not end with the evaluation. It continued with the Area Development phase and in 1990 there was money and plans for extending activities in new

provinces and for implementing one of the materials (the child feeding schedule) nationally. Eventually there could be province-specific strategies for improving young child feeding throughout Indonesia.

THE ASSESSMENT

The objective of the assessment phase was to understand the rationale behind existing child feeding practices, not just to document practices. The emphasis in the process was on obtaining an in-depth look at feeding practices within the broader household and community context. Also, it was to identify the major resistances to changing those practices and the important motivational factors to encourage change. This research was qualitative and involved a small sample from semiurban and rural locations in the districts of Pasuruan, East Java, and West Lombok, Nusa Tenggara Barat.

The Indonesian assessment of weaning practices had four main steps. Each step built on the results of the preceding step. During the first and third steps, local technical expertise was called upon. A local market research firm was hired to train Depkes (Health Department) staff and to supervise two separate focussed group discussion activities that involved approximately 180 persons. Professional anthropologists worked with Depkes staff to conduct in-depth interviews, observations, and trials of new feeding practices with 92 families that had both well and undernourished children under two years of age. In addition to the family interviews, religious leaders, kaders (local health volunteers), store owners, midwives and village leaders were also interviewed.

The first assessment step was problem identification. During this step, two research techniques were used: focussed group discussions and in-depth household interviews and observations. The focussed group discussions were held first to determine general attitudes and perceptions villages had about children, child rearing and feeding, and advice seeking. This activity was contracted to the local market research firm. They used some of their own moderators and trained members of the CWG and PWG to moderate groups that had to be conducted in a local language.

Using the concepts that arose from this research, the sample and the question guides for the in-depth household interviews and observations were completed. From the two East Java subdistricts, one semiurban and two rural villages were selected, and from the two NTB subdistricts, two semiurban (one Balinese and one Sasak) and one rural village were selected for the research. The selection of the villages was based on where the team believed the greatest differences in child feeding practices existed. It seemed that there were large differences between urban and rural settings and that in NTB, ethnicity made a difference.

Fifty households with well and undernourished children, representing a cross section of ages under 24 months, were selected in each of six villages.

The determination of well or undernourished was made from the child's growth chart, if the child had been weighed regularly in the village or by the recruiter visiting the home prior to the interview. Three visits were made to each household to talk to the mother about her work, food availability, health, morbidity and mortality in the family, food preparation, distribution and consumption and her information sources. Direct observations were made on household conditions, possessions and feeding practices. A precoded 24-hour dietary recall was used to record the child's food intake. It allowed for analysis of calorie, protein, and vitamin intakes. An Indonesian anthropologist was hired to oversee this work, and teams of nutritionists from the province were trained in ethnographic techniques prior to conducting this research.

The second step of problem analysis and concept formulation was done at the provincial level with the participation of everyone involved in step one. Part of this analysis was the comparison of real with ideal practices for each age and the determination of the beneficial and harmful practices related to children's nutritional status. After this analysis, recommendations were drafted for changes in practices that could be adopted to bring the real and ideal practices closer. These recommendations were accompanied by statements to motivate mothers to try the new practices or to help them overcome potential barriers to the new practices. The recommendations included, but were not limited to, those listed under number 3 on page 10.

The third step of intervention testing or household trials involved taking these recommendations and concepts back to the mothers for their trial or opinions. This phase, similar to phase one, employed two research techniques: household trials and discussions and focussed group discussions. The household trials were conducted by staff from the central and provincial working groups, and the focussed group discussions were again contracted to a local market research firm. The household trials were conducted with the same families that participated in the depth interviews and observations. Since rapport had been established with these families, it was possible to present them with the feeding problems observed in their household and recommendations on how to improve these problems. With the interviewer, they decided on one or two new practices that they would try over the period of one week to improve the nutrient intake of their children. When the trials were complete and the field team knew which recommendations had been successful, they took these recommendations to people who had not participated in the investigation and, using focussed group discussion techniques, sought their opinion on the new behaviors and on reasons that might persuade mothers to try the new practice.

The fourth step was the synthesis of the information from the previous three steps in a final assessment of young child feeding practices. Profiles of feeding practices for different age groups are reported along with the context in which the practices are occurring, the potential for changing the practices, and the final recommendations for program direction.

Summary of Major Findings

1. The actual practices relating to child feeding and child care noted at the time of the study:
 - First month of life
 - Practices are similar among the four ethnic groups and locations.
 - Prelacteal feeding with sugar water, honey or teas, for one to three days is very common to mark the newborn's freedom from the womb and to give the infant something until the breast milk flows.
 - Generally, but not universally, the initial colostrum is discarded because it is thought to be dirty and there is a fear it will do harm. Prelacteal feeds replace the colostrum. Traditional midwives (dukun bayi) encourage this practice.
 - By 48 hours after birth, almost all mothers have begun to breastfeed and continue to breastfeed confidently and properly during this first month.
 - Few infants are exclusively breastfed. Continuing from the prelacteal feeding, infants receive small tastes of food, particularly from family members other than the mother, "to keep them quiet".
 - Months two to four
 - Breastfeeding is continued on demand, but generally is not done exclusively.
 - Predominant use of the left breast begins, due in part to mothers breastfeeding more while working.
 - By the third month, many infants, especially in semiurban areas, are receiving rice porridge in addition to tastes of other foods. In NTB, prechewed and fermented rice is given.
 - Very small amounts of food are given at a time for fear of harming the child. This fear is especially prevalent among mothers with undernourished children.

- **Months five to eight**
 - **Nutrient intake begins to be inadequate: infants meet about 66 percent of their calorie and 50 percent of their protein requirement. This situation is aggravated by a sharp increase in diarrhea and respiratory infections.**
 - **Breastfeeding continues as per the two to four month period: on demand and primarily from the left breast.**
 - **By the fifth month, infants in semiurban areas are receiving a variety of starchy "soft" foods.**
 - **Mothers often prepare a "special" porridge for the child because they believe the child's food must be much softer than adult food.**
 - **As the infant gets teeth, the rice porridge becomes thicker. Green vegetables are often added to the rice porridge. However, in rural NTB through this period infants get only breast milk and rice.**
 - **By six months, many infants receive some protein foods (tahu or tempe or eggs) and, especially in semiurban areas, snack foods appear in the diet. However, food variety is kept at a minimum so "the child will not develop expensive habits".**
 - **Diets are extremely low in fat. Some children have virtually no fat in their diets.**
 - **Semi-solids are often given three times/day with the well-nourished children being more likely to get food three times/day while the undernourished receive food less than three times/day.**
 - **Food quantities are not measured. Children are fed while the caretaker walks with the child. And, the child is fed until "satisfied".**
 - **Semiurban mothers, because they are often out of the house, are likely to entrust child feeding to other members of the family.**
- **Months 9 to 18**
 - **Nutritional status, documented by monthly weighing, deteriorates further among this age group as dietary intake meets only half of the calorie and protein requirement and illness increases. (On any given day, approximately one-third of these children have some symptoms of an illness.)**
 - **Most children continue to be breastfed but frequency declines in the semiurban areas and some mothers in these areas wean their children at this age.**

- This is a time of true transition to an adult diet. About ten months, children begin to receive foods from the family pot and at 18 months they received a full family diet.
 - Food variety increases and is greater for the better nourished children, the semi-urban children, and the Javanese and Balinese children.
 - Fish, commonly available, is not given to children because it is thought to cause worms and accustom children to foods that are too expensive.
 - Feeding frequency remains at three meals per day although many children are given snacks to quiet them.
 - Food quantity per meal is not measured. Mothers tend to stop feeding when the child loses interest--consequently, many children eat very little.
 - Frequently, mothers with children in this age period report that their child "does not want to eat".
- Months 19 to 24
 - Although nutrient intake seems to improve, rates of malnutrition remain high as illness is not abated.
 - Over half of the semiurban children are weaned during this age, because children at this age are thought to be "big enough" not to receive breast milk. In rural areas, this is less true.
 - The child's diet does not change much during this period from that of children in the younger group.
 - Feeding frequency continues to be three times per day. These children are more likely to eat without adult supervision, receive snacks more frequently, and have no notice taken as to the amounts of food they eat.
 - During and after illness
 - Breastfeeding continues because it is thought to help cure a sick child.
 - Although mothers say they try not to vary the feeding of their ill child, these children generally receive less food because mothers think they do not want to eat and they believe food may make the illness worse.
 - Sometimes diets of older children are changed from family foods to soft foods.

- After illness, mothers are willing to give more food only if the child will accept it.

- Mothers feed sick children very cautiously and spend extra time with their child.

- **Mothers who work**

- There is no difference in nutritional status, percent caloric adequacy or frequency of feeding children between mothers working for wages or working outside the home and those not working for wages or outside the home ("non-working").

- Cessation of breastfeeding during the child's first year of life is not dramatically different between working and "non-working" mothers, although mothers who work tend to wean earlier in the second year than those who do not work.

- Mothers who work for reimbursement at home or work a half-day or less outside the home tend to have children who are fed less frequently and who have lower percentage weight-for-age than mothers who work long hours outside the home and entrust the care of their child to someone else.

2. Access to Information

- About half the mothers across both provinces listen to radio and watch TV (although not their own set). Access was the same for mothers with well and undernourished children.

- Print materials are seldom seen in the houses.

- Cassette recorders are available in many houses in the semiurban areas.

- Women rarely attend performances of traditional entertainment, but half do attend community meetings of some kind. In Muslim areas, attendance of pengajian, Koran reading, is high.

- Child attendance at monthly, village, weighing sessions varies from five (rural NTB) to 65 percent (rural East Java).

- The nutrition kader are not recognized or sought out as people who can counsel about child care and feeding.

- Dukun bayi, traditional midwives, are sources of advice at birth and during the first months of a baby's life. Their advice is not always sound.

- Religious leaders are consulted on a variety of topics, although usually not child care, and their advice is highly esteemed.
 - Grandparents are frequent sources of advice.
 - Fathers only in NTB are considered to take an active role in day-to-day child care decisions.
 - Warung, small stores or food stalls, are ubiquitous. They are visited every day by many families and several times a week by others.
3. Almost every mother who tried to improve her child's feeding practices could do so. Low family income and a scarcity of resources were seldom reasons for not trying to do something. All mothers with children over one year old did at least one thing to improve their child's diet. Mothers who did not change their current practices had young children who were sick and would not eat, or who just refused additional food.

The changes most likely to be tried by mothers related to each important aspect of child feeding: breastfeeding, food consistency, caloric and nutrient density of the food, food quantity, and feeding during and after illness. The behavioral goals made evident by the research are:

- Stimulate fuller lactation in initial months. The mother can:
 - Begin breastfeeding immediately at birth and give colostrum.
 - Breastfeed more frequently and use both breasts to satisfy the child. Diminish giving small "tastes" of food.
- Give calorie and nutrient-dense baby food that is made from family foods.
 - Introduce the child to soft food during the fourth month. This food should not be watery--just soft/smooth.
 - For a child six to nine months old, offer a soft mixed food (rice, tahu/tempeh, green leaves) plus a source of fat.
 - After the child reaches ten months, give adult foods to provide a complete meal. (Fruit was not stressed since all mothers give fruit when it is available and if it must be purchased, it is, generally, too expensive.)
- Increase the quantity of food consumed by young children.
 - Feed children six to nine months old four to six times per day, plus breast milk.

- Give food to children ten to 24 months old five times per day, combining meals and snacks in addition to breast milk.
- Give children ten months to 24 months a larger portion of food than usual (increasing frequency was not popular at this age) and try to increase the variety of foods in their diet (add one food not usually given to the child).
- Feed during and after illness.
 - For sick children at least four months old, give a soft food in addition to breast milk.
 - Increase portion size and feeding frequency by one feeding per day over normal for the child recovering from illness.

4. Other concepts important because of their influence on child feeding:

- Mothers' lack of self-confidence: Mothers are the principal decision makers regarding their infant's care but lack self-confidence in their ability to improve their child's diet. Mothers need to be encouraged that they know what is best for their child: the child should not always dictate what s/he will eat and when.
- The concern mothers have for pleasing their children and their family: Mothers want to be sure their children are "satisfied". This seems to motivate much of what they do. For example, they offer food to the young baby so s/he will be satisfied, and they will not force an anorexic child to eat because it will displease the child. This concern and the mother's lack of self-confidence interact to influence some of the same practices. The link should be established between a mother's ability to please her family, her knowledge of child care concepts, and her self-confidence to do what is correct.
- The aspirations mothers and fathers have for their children: The higher aspirations expressed by mothers of well nourished children compared to those of under-nourished children indicate that offering some vision of the future could be an important motivator for improving feeding practices. However, the aspirations need to be tailored to the province because sometimes the appeal would be for a prosperous future while other times families look for increased happiness or just satisfaction in life.
- The desirable balance between the child's physical and psychological development: The effort to achieve this balance influences the quantity and types of foods offered to a child, especially in Java where parents do not want "fat" children or children who are accustomed to "good" foods and who therefore may become greedy. The balance of these concepts is subtle and needs not be brought out in a direct manner. This may be an area where fathers can be appealed to, since in some regions it appears that the mother is responsible for the child's physical development while the father is responsible for character development.

- **The concern mothers have for the economic and time cost of a new practice:** Appeals for changes in practices need to address these two constraints honestly and directly.
- **The mix of traditional and modern concepts about child care and health service utilization:** The positive aspects of traditional practices and customs for the mother should be transferred to the "new" or modified practices advocated by the project.
- **The absence of information on child care and nutrition:** Existing information is not reaching the majority of families. A mix of available "media" is recommended: radio, shopkeepers, religious gatherings and women's meetings. Fathers also need to be reached.
- **The lack of clear definitions and an understanding of relationships between health, growth, and adequate food quantity:** Even mothers with more "modern" health ideas and those participating in government programs cannot discuss these concepts clearly. More precise concepts are needed.
- **General contentment with life:** Although parents see benefits of other lifestyles, in general they are happy with their lifestyle although they clearly recognize that it can and should be improved.
- **Fear of food:** Mothers harbour a fear of the physical harm certain foods, and particularly generous food quantities, could cause their child.
- **Use what is in the home:** Food availability is not a severe constraint, although the purchase of special foods poses problems for many, especially rural NTB families.
- **Differences between feeding practices and outlook on life are more pronounced between the semi-urban and rural population than between provinces or even ethnic groups, except perhaps for differences between the Sasak and Balinese in NTB.**

STRATEGY FORMULATION AND THE COMMUNICATIONS PROGRAM

When the research was complete, the Central Working Group conducted a three-day strategy formulation workshop where the assessment results were discussed and a general project strategy and province-specific plans were decided. This workshop was the first time that all members of the provincial and central working groups had met together. In addition to project personnel, and the advisory group, the workshop was attended by representatives of the Ministry of Planning, Religion, Agriculture and the National Family Planning Board, universities, private institutions, UNICEF, and USAID.

The first day of the workshop was spent on presentations and discussions of The Weaning Project and the recently completed assessment work. The Central Working Group presented the assessment findings. They were then critiqued and commented upon by Provincial Working Group representatives and discussed by all workshop participants. Interest was expressed at the time for undertaking similar work in other provinces.

On the second day, workshop participants were divided into working groups to discuss strategy. The guidance provided to workshop participants by the Director of Nutrition was that the bulk of the project activities had to be conceived for execution within the existing National Family Nutrition Improvement Program (UPGK). To this end the working groups were divided: 1) to explore activities that could be carried out at the UPGK monthly weighing sessions at the village health posts; 2) to explore what could be done within the UPGK multi-sectoral activities with Religion, Agriculture and Family Planning; 3) to discuss ideas about what type of activities could be done by the private sector (mainly local and national NGOs). At night each group reported on their deliberations. The third day the group divided by province (East Java and NTB) to review the overall workplans and budgets for nutrition activities and to decide what activities would be feasible.

The outcomes of this strategy formulation workshop were:

- 1) The Weaning Project should limit itself to communication and training activities. Participants felt that other interventions, for example, production of a food or improving distribution by the use of market women would tax tremendously the staff and financial resources available to the project.
- 2) The communication and training activities should have two foci: pos yandu/UPGK weighing sessions and integration into a variety of government programs and community activities.
- 3) Emphasis should be placed on strengthening the kader's role as educator.

Following the workshop, the task fell to the Central Working Group to write the detailed communication and training strategy. As work commenced on this, it was clear that a local company with creative talent and knowledge of Indonesia's media situation would be required to assist The Central Working Group with the details of the strategy, developing and testing the prototype materials, finalizing them and overseeing their reproduction.

Several local advertising agencies and non-governmental groups were interviewed. P.T. Intervista was selected, in particular Nuradi, a senior marketing professional and its president. Nuradi and his agency were the pioneers of advertising in Indonesia and have a history of public service work and experience with government agencies. The contract with P.T. Intervista initially was with Manoff International and later directly with the Nutrition Directorate.

Nuradi was briefed by the CWG on the assessment and general strategy. From this brief he developed a full strategy document and assisted the Central Working Group in sharing the detailed plans with the Provincial Working Groups and modifying the strategy in accord with their comments.

The strategy was conceptualized to:

- Introduce a "product", good and proper weaning practices (specific feeding behaviors), that is superior and will fulfill the needs of parents.
- Create consumer acceptance for "good and proper weaning practices" by promoting them through credible sources with good coverage and frequency of contact. (Enlist all available media, train the "sales force", and enhance the credibility of kaders.)
- "Outsell" the competition, old attitudes and practices related to infant and child feeding, by improving knowledge and self-confidence of mothers in their ability to change.

The target groups were identified as:

- Mothers with children 0 - 24 months,
- Fathers with children 0 - 24 months, and
- Other care takers in the family children 0 - 24 months.

The principal audience, mothers, was segmented based on the factor that most distinguished their feeding practices, the age of their child, then the child's state of health, and finally if the mother was extremely occupied. The segments are:

- pregnant women (preparation for child feeding);
- mothers with infants 0 - 3 months;
- mothers with infants 4 - 5 months;
- mothers with infants 6 - 9 months;
- mothers with children 10 - 18 months;
- mothers with children 19 - 24 months;
- mothers with children ill or recuperating from illness;
- working mothers (inside and outside the house).

The media strategy encompasses communication:

- at pos yandu;
- in the UPGK program but outside pos yandu; and
- in the private sector.

The media plan incorporates:

- kaders, dukun bayi (midwives) and other health personnel;
- community leaders, religious leaders, heads of women's groups, etc.;
- store owners;
- radio; and
- print materials.

The materials developed for these media are:

- dialogues and a jingle for radio and for cassettes;
- posters,
- leaflets; and
- counselling cards and a special child feeding "schedule".

The materials were designed to be used by multiple media. The scheme is the following:

	Cassette	Poster	Leaflet	Counselling Card and Feeding Schedule
Kader/pos yandu	x	x	x	x
Trained midwife/puskesmas	x	x	x	x
Dukun bayi		x		x
Pamong	x	x		
Religious leaders	x	x		
Women's organizations	x	x	x	x
Store owners	x	x	x	
Village, in general		x		
Radio	x			

Some of the unifying concepts or elements of the materials are:

Ibu Gizi (Mrs. Nutrition): She is the spokesperson for the project, credible and authoritative because she is seen to be mature and wise. She is behind all of the advice offered by kaders and others, who often lack credibility. All print materials carry her picture, and she is the leading protagonist in the dialogues.

The Concept of Good Proper Weaning Practices: This is the foundation of the strategy because it summarizes the "product" the project is trying to sell. The assessment showed that mothers do not have a complete understanding of appropriate feeding practices. They do not recognize what constitutes a nutritious food for their babies or know adequate quantities. Emphasis is placed on conveying that feeding concepts change as the child grows.

The Concept of Breastfeeding from Both Breasts at Each Feeding: This concept is reinforced because it seems to be the key to full breastfeeding and may be the key to mothers satisfying their baby with breast milk and eliminating or decreasing the early, small feeds of other food.

The Concept of Nasi Tim Bayi (soft, mixed rice for baby): The promotion of a homemade, mixed, soft food is critical to achieving program goals. Nasi (rice) is chosen to indicate that it is the family food and not the usual rice flour porridge. Tim (steamed) is chosen to show that the food is soft. Bayi (Baby) is part of the name in order to convey that it is a baby's food and different from the regular Nasi Tim, i.e. it is made from several ingredients (a carbohydrate, a protein, a vegetable, and, in particular, stress is placed on a fat source).

The Concept of Baby Weighing: Weighing is emphasized because monitoring change in weight is key to the mother's understanding of whether or not she is feeding her child appropriately. Also, a mother's attendance at the weighing session will ensure that she has an opportunity for intensive counselling on feeding.

Details on the materials are given below.

Audio cassette sets are inexpensive and versatile. They can be played on the tape players found in villages and given to radio stations. One side of the cassette has the project jingle and popular songs interspersed with messages (dialogues). The other side has the dialogues alone. The side with the music can be used to attract people to a gathering or to a store and the side with the dialogues used to counsel a mother during a home visit or at pos yandu. One set consists of eight cassettes: introduction, children 0 to 3 months, 4 to 5 months, 6 to 9 months, 10 to 18 months, 19 to 24 months, mothers with sick children and working mothers. The messages on these cassettes are the same as those on the counselling cards.

Three **posters** (initially five) present the major Weaning Project messages. One stresses immediate, exclusive breastfeeding after birth with colostrum and continued full breastfeeding (use of both breasts). Another stresses that food does not need to be started until four months, that by six to nine months the child should be eating Nasi Tim Bayi, and by ten months should begin regular family foods. The third poster advertises Nasi Tim Bayi. All of the posters feature Mrs. Nutrition and carry the reminder to consult the kader, pos yandu, or health center for more information. Exhibit A is one of the posters.

The **leaflet** is designed to be used by the kader or "teacher" when instructing the mother how to make Nasi Tim Bayi. It can then be taken home by the mothers to assist them in their home preparation. The leaflet gives detailed instructions for the Nasi Tim Bayi recipe with pictures. Two variations are presented: one using raw ingredients and another using already cooked foods. On the back it lists messages about feeding practices for this age group and contains the instruction that the child at each meal should eat a spoonful of food for every month old s/he is. Exhibit B is the inside of the leaflet.

Exhibit A: Poster
"An important message from Mrs. Nutrition"

PESAN PENTING IBU GIZI



IBUGIZI

Berikan bayi ibu makanan pendamping Air Susu Ibu

- Umur 4 bulan
mulai diberikan
makanan lumat
- Umur 6 - 9 bulan
berikan nasi tim
bayi



Cara yang mudah dan murah untuk membuat NASI TIM BAYI

DARI BAHAN SEGAR :

A. Sediakan Bahannya :



o 2 sendok makan peres Beras.



o 1 potong Tahu atau Tempe atau Ikan atau Telur atau Kacang-kacangan.



o 10 lembar Daun Bayam atau 10 lembar Daun Kangkung atau Sayuran Hijau lain.



o Setengah gelas Air ditambah 1 sendok makan Minyak Kelapa atau setengah gelas Air ditambah setengah gelas Santan.

B. Cara Membuat :



1. Masukkan Air yang telah dicampur Minyak Kelapa atau Air yang telah dicampur Santan ke dalam panci berisi Beras, Tahu atau Tempe atau Lauk-Pauk lain.



2. Mesaklah bahan-bahan sambil diaduk sampai setengah matang.



3. Masukkan Daun Bayam atau Daun Kangkung atau Sayuran Hijau lain yang sudah diiris halus.



4. Setelah makanan matang, angkat makanan dari api.

Makanan siap diberikan kepada bayi.



DARI MAKANAN KELUARGA :

A. Sediakan Bahannya :



o 5 sendok makan Nasi



o 1 potong Lauk-Pauk yang tersedia hari itu, misalnya Tempe Goreng atau Tahu Goreng atau Ikan Goreng atau Telur. Jangan beri Lauk yang pedas.



o Daun Bayam atau Daun Kangkung atau Sayuran Hijau lain yang disayur atau ditumis.



o Kuah Sayur Bening atau Kuah Sayur Bersantan yang cukup untuk mengekusi Nasi.

B. Cara Membuat :



1. Taruh Nasi, Lauk-Pauk, dan Sayur dalam piring kecil atau mangkuk.



2. Tuangkan Kuah Sayur Bening atau Kuah Sayur Bersantan ke piring atau mangkuk.



3. Campurkan dan Lembutkan semua makanan dengan sendok.

Makanan siap diberikan kepada bayi.



169

A feeding schedule (jadwal) was introduced late, in response to the monitoring study's finding of the mothers' desire to have such a schedule. It is designed to fit into the KMS (weighing card) and be taken home by the mothers. It illustrates the age at which foods should be introduced and the frequency of feeding for children at each month from 0 to 24 months. Each box on the schedule corresponds to one feeding. Feedings include breast feedings, mashed foods, mixed weaning food (Nasi Tim Bayi), family foods, and snacks. The schedule also reminds mothers to feed more and to breastfeed and/or give more food when the child is recovering from illness. Exhibit C1 shows the schedule used in the project and Exhibit C2 shows the schedule that is now being used nationally.

Counselling cards are divided by audience segment and are used to assist the kader in talking to a mother, after her child has been weighed, about exactly how she should feed her child. The counselling set originally consisted of 16 cards that were reduced to nine cards after the monitoring and the evaluation were completed.

Card No.	Age group	<u>Messages</u>	
		Main	Secondary
1.	Overall 0-24 mos (introduction)	The correct way to feed a child 0-24 mos	The older the child, the more food he needs
2.	0-3 months	Breastfeed immediately after birth with protective milk (colostrum)	
		Exclusive breastfeeding first three months	Breastfeed from both breasts, left & right
3.	4 - 5 months	Continue breastfeeding from both breasts	
		Start to give mashed foods to child	Prepare food for the child from the family pot
4.	6 - 9 months	Give Nasi Tim Bayi 3 times/day	Continue breastfeeding from both breasts
		Increase quantity of food as child gets older	Feed the child patiently
5.	10 - 18 months	Give complete meals (like family meals) 4 times/day	Describes nutritious foods. Continue breastfeeding.
		Give snacks at least once/day	
6.	19 - 24 months	Give family food 4 times/day	Continue breastfeeding
		Give snacks 2 times/day	

Messages

Card No.	Age group	Main	Secondary
7.	Sick child	0 - 4 mos, breastfeed 4 - 24 mos, breastfeed and give food	
	Child recovering	Give more food and breastfeed more frequently for 1-2 weeks after the illness.	
8.	Mother working outside home	Leave child with reliable person and give instruc- tions about how to feed the child	Breastfeed before leaving the child and upon returning home
9.	Mother busy at home	Find a reliable person to help with the child and give her instructions about how to feed the child.	

Examples of two counselling cards are in Exhibit D.

Exhibit C1: Child Feeding Schedule (Project)

UMUR (Bulan)	 PEDOMAN PEMBERIAN MAKANAN BAYI DAN ANAK UMUR 0 - 24 BULAN Ibu Gizi							BILA SEMBUH DARI SAKIT TAMBAH KAN :
0 - 1								
1 - 2								
2 - 3								
3 - 4								
4 - 5								
5 - 6								
6 - 7								
7 - 8								
8 - 9								
9 - 10								
10 - 11								
11 - 12								
12 - 13								
13 - 14								
14 - 15								
15 - 16								
16 - 17								
17 - 18								
18 - 19								
19 - 24								



Handwritten signature

Exhibit C2: Child Feeding Schedule (National)

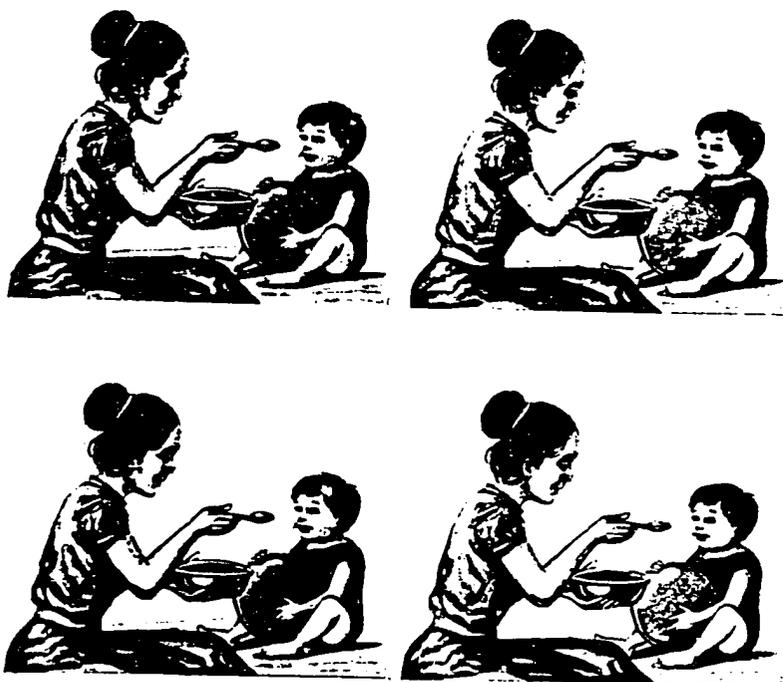
LEMBAR PENYULUHAN

UMUR (Bulan)	PEDOMAN PEMBERIAN MAKANAN BAYI DAN ANAK UMUR 0-24 BULAN							BILA ANAK MENCRET	IMUNISASI
	0-1	1-2	2-3	3-4	4-5	5-6	6-7		
0 - 1									ORALIT PERTOLONGAN PERTAMA *ASI TETAP DIBERIKAN *ASI TETAP DIBERIKAN *MAKANAN DIFERLEMBEK
1 - 2									
2 - 3									
3 - 4									
4 - 5									
5 - 6									
6 - 7									
7 - 8									
8 - 9									
9 - 10									
10 - 11									
11 - 12									
12 - 13									
13 - 14									
14 - 15									
15 - 16									
16 - 17									
17 - 18									
18 - 19									
19 - 20									
20 - 21									
21 - 22									
22 - 23									
23 - 24									

182

ANAK UMUR 10 — 18 BULAN

- Berikan makanan lengkap seperti makanan keluarga 4 kali sehari



- Berikan makanan selingan 1 kali sehari



- Lanjutkan pemberian Air Susu Ibu



Bina Gizi Masyarakat Dep. Kes. RI.

Pemberian Makanan Pendamping Air Susu Ibu yang baik dan benar mencegah penyakit kurang gizi pada anak.



Exhibit D: Counselling card
Children 10 - 18 Months

IBU SIBUK DI RUMAH



- Titipkan bayi pada orang yang dipercaya



- Berikan petunjuk tentang pemberian makanannya



Usahakan agar anak mendapat perhatian yang cukup, meskipun ibu sibuk di rumah



IMPLEMENTATION, SUPERVISION AND MONITORING

While the materials were being pretested, refined, and reproduced, plans were made to train or orient the "providers" of information in the child feeding concepts and in the use of the materials. In December 1987, trainers (13 representatives, two from each administrative level in both provinces) were trained for two days. In February 1988, approximately 1000 kaders, two from each pos yandu, were trained for two days at the health center in each project subdistrict. Between January and April 1988, one-day orientations were held for:

- a) intersectoral teams (mostly the UPGK teams) from the district and provincial levels;
- b) community leaders, including religious leaders, PKK, the neighborhood leader;
- c) midwives;
- d) store owners.

The training and orientation sessions reviewed the project and its purposes, discussed each material and its major messages, and finally reviewed and practiced (through role plays) how to use and handle the material. Extra time was spent with the kaders on the use of the counselling cards. The training was followed up with immediate supervision of the distribution and use of the materials.

The project was formally launched in March 1988. Following launch, each administrative level had responsibility for monitoring and supervising the project in a more intensive way than for routine programs. The central level had responsibility for special monitoring of project progress every two months. Forms were designed to collect information from each monitoring visit.

The monitoring done by the Central Working Group every other month was qualitative in nature. In this monitoring, particular villages were picked at random and visited to see the extent to which each educational agent was performing the required tasks and the extent to which mothers had contact with the program and recalled messages. These special monitorings indicated that the project launch was smooth in East Java, uneven in semi-urban Cakranegara, NTB and very slow in rural Gangga, NTB.

Monitoring at a local level was routine and covered quantitative rather than qualitative aspects of the project. This monitoring was done once per month by provincial representatives to the district level and twice a month by the district representative to the subdistrict health center. A health center representative was responsible for supervising each pos yandu in the project villages once every three months.

After six months of project implementation, in August 1988, a monitoring study or mid-course review was conducted. For this review the Central Working Group, Manoff Group and an Intervista consultant went to the field for almost two weeks to take a detailed look at

project functioning. The field work was concentrated at the subdistrict and village level. The review found that:

- Implementation was very dependent on the strength of the ongoing integrated health delivery program, pos yandu. Where the pos yandu was strong, i.e. regular, well-staffed, organized by activity and with good child weighing, the child feeding education was well implemented. When the pos yandu program was weak (especially Gangga in NTB), the child feeding education had extremely poor implementation. This made good sense because the project aims only to strengthen the education component of the program, not the infrastructure as a whole. If staffing is poor, inadequate supervision, or general skills undeveloped, this project will do little to change those conditions. The recommendation at the time of the study was: 1) to drop Gangga from the evaluation due to poor implementation, and 2) to select only "well developed" areas for the expansion of the project so the effort is not lost.
- Activities outside of pos yandu needed to be strengthened: for example, more stores and community groups should be involved in the program. The initial idea was to involve almost all the small stores or food stalls in a village but in reality only one or two per village had the materials, greatly reducing the visibility of the program messages. At the time of the monitoring study, it was expected that contact with the stores was not having much impact. The recommendation was that a special person be hired to supervise these activities, visit the stores, and distribute materials at more stores.
- Some of the materials needed to be revised to be even more specific: a) a child feeding schedule should be made for each mother (see description on page 19); b) the counselling card set needs to be simplified, and the specific actions to convey to mothers expressed more clearly; c) the graphics on the Nasi Tim Bayi leaflet must be clearer and stepwise; d) the posters needs to have clearer messages and the set needs to be reduced in number; e) the set of cassettes also should be reduced: one cassette produced with songs and a few general messages and the other cassettes with the specific dialogues.
- Once new materials are available, a retraining of kaders is needed to review communications skills. Special care must be take that the kaders who are trained are the ones who are active at pos yandu. In some areas, the kaders will not be as effective as they might have been, because the "kaders" chosen to attend the training and receive the materials were not those women who work at pos yandu. Therefore, especially in NTB, some pos yandu were found that had not been exposed to the counselling cards yet women from the village had been trained.
- Women's organizations, especially the PKK, should be encouraged to implement the project, because when they are present at pos yandu, more education is undertaken; and

at their meetings, they have more time to develop the particular child feeding concepts with mothers.

- The provincial-level teams need to encourage the local radio stations to play the cassettes at least during some of the time allotted for health programming. It would be better to play one dialogue at a time, instead of all three to four dialogues created for one age group.
- The supervision scheme and forms need to be simplified. Supervision (helping the providers improve their activities) should be stressed over monitoring (quantitative accounting).

To interpret the following evaluation results, it is important to know that of these recommendations, only the feeding schedule had been implemented prior to the field work for the impact evaluation. Most of the other recommendations have been implemented since the evaluation survey took place for implementation during the area development (expansion) phase of the project.

EVALUATION

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.

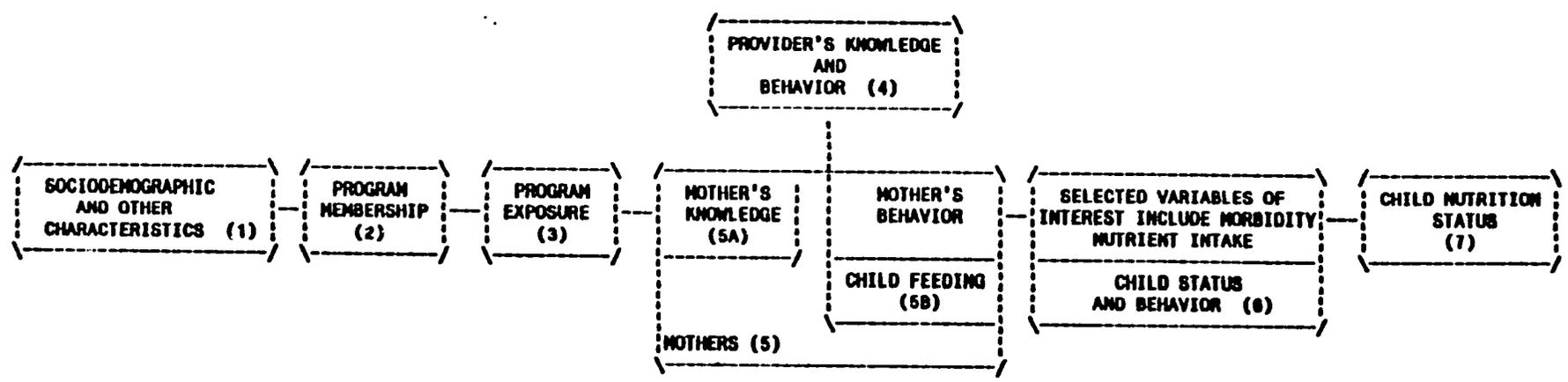
These changes were observed after slightly less than one year of program implementation. The Weaning Project messages had a strong impact, despite the fact that contact with the project was not universal and implementation of certain messages was not optimal.

The Conceptual Framework and Research Hypotheses

The conceptual framework (Figure 1) that guided the design of the PMPA impact evaluation follows the chain of events or causal influences that are believed to affect behaviors of concern to the project. Arrows indicate the expected direction of influences in the chain.

The different variable domains in the conceptual framework (i.e., links in the chain) that were studied in the impact evaluation are:

Figure 1
CONCEPTUAL FRAMEWORK



218

1. Sociodemographic characteristics
2. Program membership (resides or does not reside in the program kecamatan)
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

The research hypotheses that guided the design of this framework are listed below:

For Mothers:

1. Residence in the program subdistrict, through exposure to program messages, will result in improvements in mother's knowledge, confidence, and provision of healthier diets to their children.
2. Exposure to program messages will increase mothers' confidence in their ability to plan and offer healthy diets to their children.
3. Exposure to program messages will result in gains in mother's knowledge about sound weaning practices and child feeding.
4. Exposure to program messages will result in gains in knowledge that will lead to healthier child feeding and weaning practices.
5. After controlling for other relevant factors, exposure to the program, through the mechanism of mothers' improved knowledge and healthier child feeding and weaning practices, will result in the child eating a healthier diet.
6. Over time, improvements in mothers' knowledge and behavior and improved nutrient intakes will result in improved nutritional status of weaning-aged children.

For Kaders

1. Residence in the program area, through exposure to program messages, will result in improvements in kaders' knowledge.
2. Exposure to program messages and to PMPA monitoring and supervision will improve kaders' performance in giving age-specific weaning messages to mothers and in teaching mothers of sick children and working mothers how to feed their children.

Methodology

The evaluation was designed as two cross-sectional surveys (a pre/post-test design) among project and comparison groups of mothers and kaders 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 and health program implementation (the degree of urbanization and level of health program implementation are classifications defined and given by the government). 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

Sociodemographic Characteristics

A variety of sociodemographic 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 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. Javanese, Balinese and mixed ethnic areas have a higher SES score than Madurese and Sasak areas. Urban dwellers have a higher SES score than rural dwellers.

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. Other determinants of the kader's role as educator were community participation, 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 to 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 available, 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 pos yandu.

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 exposed 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 6 to 9 month old and the 25 months and older age ranges, caloric adequacy in the PMPA groups was significantly higher. This significant difference in the 6 to 9 month olds correlates well with the areas of major gains in knowledge and practice improvements, confirming that the weaning food 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) 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 (Figures 2 and 3). 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 pos yandu education table, and/or at pos yandu and at UPGK activities outside pos yandu, 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.

DISCUSSION AND LESSONS LEARNED FROM THE PROJECT

This is the second time a pilot project in Indonesia has demonstrated, through rigorous evaluation, that an enhanced nutrition education component can improve substantially the impact of the national nutrition program, UPGK.¹ This evaluation also points to lessons

¹ The first time the role of enhanced communications in child feeding demonstrated an impact on growth was in the government's Nutrition Communication and Behavior Change Project (1977-1982). Details of this project are contained in Manoff International's report to the Indonesian Government, Nutrition Communication and Behavior Change Component of the Indonesian Nutrition Development Program, volumes I-V, 1984 and in several journal articles and book chapters including: Assignment Children, volume no. 65/68, 1984, pp. 95-113; Education for Health, no. 1, 1985, pp. 11-29; and chapter 8 in: J. Coreil and D.J. Mull, ed. Anthropology and Primary Health Care, Boulder: Westview Press, 1990.

from the pilot experience and to areas where the communications can be strengthened. It is time that an enhanced education component be added throughout the national UPGK program.

In undertaking any project expansion or replication, several lessons from the Weaning Project should be remembered.

1. The educational content responded to the major practice problems mothers were experiencing -- it was not just a transfer of nutrition information. For a country as large and as varied as Indonesia, however, it is important to consider that extensive research has now been undertaken in five provinces (South Sumatra, Central Java, D.I. Yogyakarta, East Java and NTB), with similar core messages resulting. However, as the educational component is expanded, it should be done on a province-by-province basis, so that subtle differences in beliefs and practices are captured and responded to. At a minimum, from a set of core messages, language, specific foods, and some of the rationales for undertaking certain practices will need to be adapted.

During the Weaning Project, a rigorous protocol was tested for examining and better understanding families' child feeding practices. Emphasis was placed on the Central Working Group learning the process and managing it. Recommendations have been made on how to streamline the protocol for use in other provinces. For example, focussed group discussions could be eliminated as the first step and used only at the end of the process. The in-depth interview could be drastically reduced in length. Once these changes are made, staff within the Nutrition Directorate can implement and manage this type of research and could complete it in about four to five months.

2. The messages that had the most impact were precisely stated and had a name or a product identify associated with them: Susu Pelinding (protective milk/colostrum) and Nasi Tim Bayi. These "products" were both new and appealing to the mothers. From this project, as well as the earlier one, it seems there is ample experience to move forward with improved breastfeeding messages and a home-made weaning food for children in the critical transition period prior to eating an "adult" meal.

However, the concepts such as frequency and quantity per meal were not captured effectively in the materials and, although stated precisely, were not disseminated well. To improve the impact of Weaning Project messages/materials, the following recommendations are made:

- Give a more central place to the message about beginning breastfeeding immediately after birth: although this was a principal message, the poster about breastfeeding practices had a title of "susu pelindung" or protective milk (colostrum). The colostrum message was

stressed more than an emphasis on beginning feeding immediately, because the idea of selling "protective milk" was innovative and exciting. The concept of a protective milk appeared to have changed perceptions of colostrum. However, the success of this concept was not coupled by the success of the accompanying message to breastfeed immediately. Since this was displayed less centrally on the poster, it may have had less of an impact on mothers and kaders. The message about immediately breastfeeding should receive more emphasis in the materials concerning breastfeeding practices.

- Clarify the concept of adult food: The messages for children over nine months old were difficult to evaluate because the definition of adult foods was not standardized. The messages for this age group also involved messages about feeding frequency which have been clarified by the feeding schedule, but the amount fed per meal needs more emphasis and clarity.
- Reduce the number of counselling cards: One of the reasons that the messages for older children were less successful was that kaders tended to use only the first few counselling cards because they felt that the whole set was too long. These first few cards concentrated on messages for younger children. The counselling cards have been reduced in number from 16 to nine to respond to this implementation problem and have been completely revised so that all major messages are represented graphically on the front of the card. The messages for sick children and working mothers suffered also because they were on the last few counselling cards.
- Continue to use the feeding schedule. This material was introduced only a few months prior to the education but seems to be essential in reinforcing the messages about transition ages and frequency of feeding which are complex and were not universally understood. The feeding schedule also offers the mothers a reminder of what she should do and the kaders a way to follow up on advice given earlier.

3. The important role of interpersonal communication, especially via the kader, cannot be underestimated. Again, in both projects the concept of counselling was well developed--kaders giving specific messages to mothers for their child of a certain age. Having this specific information and having been trained in how to counsel seemed to increase the kaders' confidence in giving advice, and the mothers' receptivity, as the advice was more relevant and better presented than before. More emphasis should be placed on kader training in communication skills because they are the "sales force" for new concepts and products. Likewise, in this same context, it is critical to remember that the kader and the entire educational system is only as strong as the basic program infrastructure. Thus, as enhanced educational components are put in place, they should go first where the basic program is functioning well.

4. Supervision of kaders emerged as an important determinant of their work as educators, particularly the amount of time they spent in educational activities. This extra time devoted to education may have been important in overall project impact. The importance of good

supervision complements the point made above that the education component can have its maximum effect where the overall system is working well.

5. The total package of educational materials and the mix of media seem to have been appropriate, since even those mothers who do not recall direct contact with the program have been influenced by it. Clearly, some of the influence comes from the word-of-mouth contact with other mothers, but some unconscious message reception occurs when the message becomes part of the environment, as it does when shopkeepers, religious leaders, women's organizations, and village leaders use, for example, the cassettes during community work parties or at social gatherings. It is important not to limit the program only to health channels, but to make it a community program. In this context, the recommendation from the mid-term evaluation, to expand the use of store owners, should be done and reviewed after a three and six month implementation period.

In addition to these observations/lessons from the education and training experience, there are some lessons to learn from the organization and management of this effort that from the outset had as its goal sustainability.

1. From the outset, there was a commitment to building a sustainable project. The first step in this process was the creation of a partnership between the technical assistance team and the in-country implementers. This partnership was forged through the creation of the Central Working Group and through the first project activity: seeking funding for local activities that would be administered managed by Nutrition Directorate personnel. Sharing responsibility for project resources meant that decisions were mutually agreed upon, that all parties were ultimately accountable and that the in-country implementing group developed a relationship with an outside funding agency (in this case, USAID/Jakarta).
2. Decentralized decision making is also part of building a sustainable project. Creating the Provincial Working Groups was a step toward this end, although involvement of the project implementors at the province level should have been much more consistent.
3. The advisory group proved invaluable as a mechanism for informing and receiving comments from leading nutrition programmers, the donor community and other key individuals over the life of the project. However, even with the advisory board, perhaps more work should have been done with UNICEF and UPGK program personnel to ensure that the results and products resulting from the Weaning Project would be adopted by UPGK. Expansion of the project seems most likely by the NGO community, on a small scale by UPGK, and through the pos yandu enhancement program efforts carried out by the Center for Community Health Education (which has replicated the child feeding schedule nationally).
4. The partnerships that were forged in-country between the Nutrition Directorate and a market research group, an ad agency and an evaluation group, strengthened the project and helped make this type of collaboration less formidable and more probable in the future.

5. The institutionalization of the social marketing process seems to have taken place within the Nutrition Directorate, particularly among this project's personnel. The social marketing workplan, with its clearly delineated steps and decision junctures, made project management easier and more feasible for replication.