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**A Rapid Assessment of Infant
Growth Faltering and the Capacity for
Community-based Responses in Uganda**

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Submitted by:

**Charles Teller, Ph.D., WINS Team Leader
The Pragma Corporation**

**Charlotte Neumann, M.D., WINS Consultant
School of Public Health
University of California, Los Angeles**

**John Mudusu, Medical Nutritionist
Ministry of Health**

**Ursula Wangwe, Nutritionist
Ministry of Health**

**Louise Sserunjogi, Nutritionist
CHDC/Makerere University**

**Imelda Zimbe, Nutritionist
IPH/Makerere University**

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Acronyms

AAO	Assistant Agriculture Officer
CB-GMP	Community Based Growth Monitoring Promotion
CBD	Community Based Distribution (contraceptives)
CBHC	Community Based Health Care
CDA	Community Development Assistant
CDD	Control of Diarrhoeal Diseases
CDO	Community Development Officer
CHDC	Child Health and Development Centre
CHW	Community Health Worker
DHMT	District Health Management Team
DMO	District Medical Officer
EPI	Expanded Programme of Immunisation
GM/P	Growth Monitoring/Promotion
GOU	Government of Uganda
HA	Health Assistants
HI	Health Inspectorate
HIS	Health Information System
HO	Health Officers
IDD	Iodine Deficiency Disorder
IPH	Institute of Public Health
IUGR	Intra-Uterine Growth Retardation
LBW	Low Birth Weight
MA	Medical Assistants
MCH	Maternal Child Health
MLG	Ministry of Local Government
MOH	Ministry of Health
MUAC	Mid Upper Arm Circumference
NFNC	National Food and Nutrition Commission
PAPSCA	Programme for the Alleviation of Poverty & Social Cost of Adjustment (World Bank)
RAP	Rapid Assessment Procedures
RC	Resistance Council
RUWASA	Rural Water And Sanitation
SHEP	School Health Education Project
SIDA	Swedish International Development Agency
SPH	School of Public Health (UCLA)
SWIP	South West Integrated Programme
TBA	Traditional Birth Attendants
TOT	Training of Trainers
UCLA	University of California, Los Angeles
UDHS	Uganda Demographic Health Survey
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VHC	Village Health Committee
VHW	Village Health Workers
WINS	Women Infant Nutrition Support Project (A.I.D. funded project implemented by Education Development Center, Inc.)

EXECUTIVE SUMMARY

Over half of the young children in Uganda have chronic undernutrition, one of the highest levels in the world. Steep declines in adequate growth begin in the first year of life. The new Uganda National Food and Nutrition Policy recommends further study of this alarming situation before developing appropriate responses. Moreover, the new Ministry of Health (MOH) plan proposes to expand Primary Health Care (PHC) and mobilization of Community-Based Health Care (CBHC) as strategies to prevent illness and malnutrition.

The purposes of the WINS assessment were to:

- 1) Conduct a rapid, in-depth analysis of the infant growth and weaning situation, and
- 2) Identify feasible approaches for strengthening the links between the formal health care delivery system and the community.

The WINS assessment team was composed of two external and four Ugandan nutrition experts. They worked for three weeks in September, 1992 in both Kampala and in two districts, in collaboration with District Health Management Teams. The assignment was carried out in coordination with the Child Health and Development Centre, Makerere University and the Nutrition Division of the MOH.

The WINS methodology consisted of rapid assessment procedures (RAP) for nutritional analysis and programme evaluation at multiple levels: national, district, sub-county, parish, community and household. The two districts selected for in-depth study were among the most malnourished areas in the country: the Eastern district of Iganga and the Southwestern district of Rukungiri. Several qualitative and quantitative methods were implemented with the assistance of district counterparts and members of the Resistance Committees (RC) at the 1-3 levels:

- 1) anthropometric measurements taken on nearly 700 individuals, including mothers, infants and young school children;
- 2) in-depth case histories on 32 households with children under two;
- 3) 7 formal focus groups: 3 groups of health workers, 2 groups of mothers and 2 of fathers
- 4) observations on 26 health service delivery points
- 5) 8 semi-structured group meetings
- 6) numerous key informant interviews

A crucial aspect of the RAP is immediate feedback of the information to potential users in order to generate dialogue for better interpretation and mobilization for planning.

The main findings from the WINS assessment can be summarized as follows:

LEVELS OF UNDERNUTRITION - we confirm the results of the 1988-89 Demographic and Health Survey (DHS) which showed very high levels of moderate and severe stunting in rural young children. Much of the growth faltering is initiated between 4-6 months of age, and peaks to over 50% in the second year of life. We went beyond the DHS results to explore intra-district differentials and maternal malnutrition. Within the same district, a wide range of stunting was found, from 70% in the rift valley of Northern Rukungiri, to only 10% in the elite private school in Rukungiri town. Maternal nutrition problems were quite prevalent, such as undernutrition (20-40%), anaemia and goiter.

DETERMINANTS OF POOR INFANT GROWTH - major illnesses (measles, malaria, pneumonia and diarrhoea) were the main factors identified in the case histories as precipitating specific periods of growth faltering (leveling off or weight loss), as analyzed in the case control histories. Other important situational factors were food unavailability, lack of access to quality health care, inadequate child care, and social and family problems. The interruption of breastfeeding because of a new pregnancy usually resulted temporarily in faltering of growth (as observed on the child health card records), after which there was usually catch-up growth. The key underlying factors identified were year-round food insecurity, poor sanitary environment, conflictive husband-wife decision-making on intra-household resource allocation, and maternal malnutrition.

FEEDING PRACTICES - The type of supplemental foods used during the weaning period or the age of introduction did not vary much among children with poor or adequate growth. Better self-perception of the quality and quantity of breastfeeding was associated with good growth. Average age of introduction of supplementary foods was between 4-6 months. Earlier introduction was related to the common belief of getting the child accustomed to other foods in case the mother is unable to breastfeed (due to illness, separation, pregnancy, etc.), and to perception of inadequate milk production by the mother. Some impoverished women were observed to lack the time, energy or maternal competence to better utilize available traditional foods for child feeding.

HEALTH SYSTEM - The overall access and quality of care in both the government and private health systems was severely criticized by people at all levels. The RAP identified similarities and differences in nutrition-related health care delivery in the two districts. There is little or no growth monitoring being carried out, particularly in one district. When it happens, it is usually attached to immunization (EPI) clinics (which have good coverage) and thus concentrated on children under five months. This leaves the older, more nutritionally vulnerable infants and toddlers with little coverage. The nutrition counselling opportunities are

potentially available through CDD home visits, but these visits tend to be infrequent and untargeted, and often malnutrition-related observations are being missed. Prenatal coverage is quite high in Uganda, but usually consists of only one visit, and that also late in the pregnancy. Under these circumstances, little maternal nutrition monitoring or education takes place. One District has better distribution of the health inspectorate staff with community linkage capability, the other has effectively mobilized community-based health committees and trainers of CHWs.

COMMUNITY ENTRY POINTS - Entry points that are physically, culturally and economically feasible linkages between the health and social sectors and the community (RC levels 1 & 2) were identified:

- 1) Community-based health care committees (CBHCCs)
- 2) EPI outreach clinics followed up by community-based growth monitoring and promotion (GM/P) and integrated home visits (CDD, CBD)
- 3) Antenatal, including pregnancy monitors and family planning clinics,
- 4) Women's clubs, PTAs, and church groups with related income generating activities,
- 5) Primary schools, and
- 6) Existing traditional health and local "food" advisors.

To support these community-based activities, the district supervisory and operational level (multisectoral) outreach workers (teachers, ag. extension, community development and home economist and health) should be reoriented in nutrition and motivated and trained to work in coordination with the RC structure and traditional midwives/healers. This will ensure that the community's priorities are known, respected and that households are sufficiently mobilized.

The WINS team proposes these RECOMMENDATIONS to the government, university, NGOs, international donors, and private sectors and community:

POLICY

* Promote and encourage multisectoral approaches to addressing the nutrition problem, such as the National Food and Nutrition Policy, and the MOH integrated MCH programme through the new Child Nutrition/Growth Promotion Action Plan.

* Address the serious problem of household food insecurity in a broad, multisectoral manner, in coordination with the Ministry of Local Government (MLG) and District Administrator's Office.

PROGRAMME

* Use multiple entry points to bridge the gap between the health facilities and the community within the new Three-year

Health Plan

* Strengthen the nutrition component of the MOH's integrated MCH programme by inclusion of explicit objectives and activities and by provision of adequate technical resources for implementation at operational levels.

* Revitalize growth monitoring/promotion of young children as well as maternal nutrition monitoring into the MCH programme.

TRAINING/CAPACITY-BUILDING

* Develop capacity-building strategies in policy and programme-relevant applied research, nutritional monitoring and surveillance, planning and programme evaluation to support the new Nutrition Division of the MOH and appropriate centres/institutes/departments of Makerere University

* Strengthen the new integrated MOH approach to training for the MCH/nutrition programme within PHC, and accelerate CBHC strategies. The programme should be in breastfeeding protection, maternal nutrition, infant feeding promotion and dietary management of illness.

* Extend RAP approaches, such as those developed in collaboration with the Ugandan colleagues and used in the WINS Assessment team, to other priority districts and consolidated in the existing districts, with greater local participation.

RESEARCH

* Extend and intensify applied, operational and qualitative research on the causes of maternal malnutrition and infant growth faltering. Updated social science and epidemiological techniques should be applied.

* Support careful longitudinal research on the breastfeeding, infant feeding and other nutrition-related factors associated with major illnesses in the first two years of life.

INTERNATIONAL DONORS

* USAID and UNICEF should continue to collaborate to ensure that nutrition programmes are appropriately studied and planned, with accelerated implementation, starting in selected experimental districts which are sensitized and committed.

I. INTRODUCTION

National Background

Uganda has only recently recognized its serious problem of malnutrition when compared to neighboring countries (Teller et al, 1991; CHDC, 1992); The Uganda Demographic and Health Survey of 1988-89 documented the high prevalence of chronic undernutrition, and the steep decline in growth beginning in the first year of life (UDHS, 1989). Subsequent in-depth analysis and national seminars have raised the awareness of the GOU and the public about the magnitude of the problem that a food-rich country had never taken seriously (Jitta, et al, 1992). The problem has been redefined as one of chronic undernutrition and long-term deprivation related to poverty, disease and ignorance (NFNC, 1992), rather than one of acute malnutritional disease (eg., kwashiorkor or marasmus). Recently President Museveni has identified malnutrition as one of the top five problems in Uganda.

However, the determinants of this early growth faltering have not been studied in detail. The new Uganda National Food and Nutrition Policy and Strategy (NFNC, 1992) recommends further study of this alarming situation before developing appropriate responses. Moreover, the new Three Year Plan of the Ministry of Health proposes expansion of Primary Health Care and mobilization for Community-Based Health Care (MOH, 1992). These steps should provide important operational strategies for linking the health and social sector with the Resistance Council (RC) structure and the community.

The main sponsor of this Assessment, USAID, in coordination with the UNICEF health/nutrition country programme, have been actively involved in sponsoring applied research and policy development in nutrition, and in addressing nutrition considerations in CDD (UNICEF, 1992). However direct nutrition programmes and components that had been recommended by previous consultants and the MOH were slow in getting off the ground. UNICEF is now considering raising the importance of nutrition in its revised Country Programme, and USAID is considering incorporating breastfeeding and weaning into its new Family Health (DISH) project design. Other bilateral donors, such as Swedish SIDA, are assisting the government to think through its nutrition programming. The World Bank, in preparing for its new Second Health Project support, is also considering the inclusion of nutrition as a major component.

The WINS Assessment

The WINS assessment had with two major objectives:

- 1- Conduct a rapid, in-depth analysis of the infant growth and weaning situation,

2- Identify feasible approaches for strengthening the links between the formal health care delivery system and the community (WINS/EDC, Aug. 1992; State Dept. cable #259461, Aug. 1992).

This WINS infant and weaning period assessment was conducted in coordination with a USAID-sponsored Breastfeeding Assessment carried out in the three previous weeks (Mukasa et al, 1992; Wellstart, 1992). The main users of these results, were expected to be the Ministry of Health, the District Ministry of Local Government and the Donors. The donors requested that practical recommendations be forthcoming to meet both short term and medium term information needs for policy-making and programme development. Consequently, dissemination and planning workshops are now scheduled for November, 1992.

Capacity-building was also a major consideration of this assignment (see Institutional Framework, Figure 1). The counterpart institutions, the Nutrition Division of the Ministry of Health and Makerere University, allowed some of their key nutrition personnel leave in order to participate full-time as colleagues in this three-week assignment. Nutrition had just been elevated to the important level of "Division" within the Ministry of Health. Thus, training in new social science and epidemiological methods and techniques as applied to nutritional assessment and programme formulation, and sharing of experiences, were part and parcel of this effort.

The assessment team was composed of two external consultants with substantial experience in Ugandan nutritional studies (a social scientist/nutrition planner and a medical nutritionist), and three Ugandan nutrition experts with extensive applied research and programme implementation experience. Moreover at the District levels, the DMOs assigned their technical and supervisory personnel to join the team, and at the community levels, the RC structure opened doors to the villages and households and actively joined in the assessment.

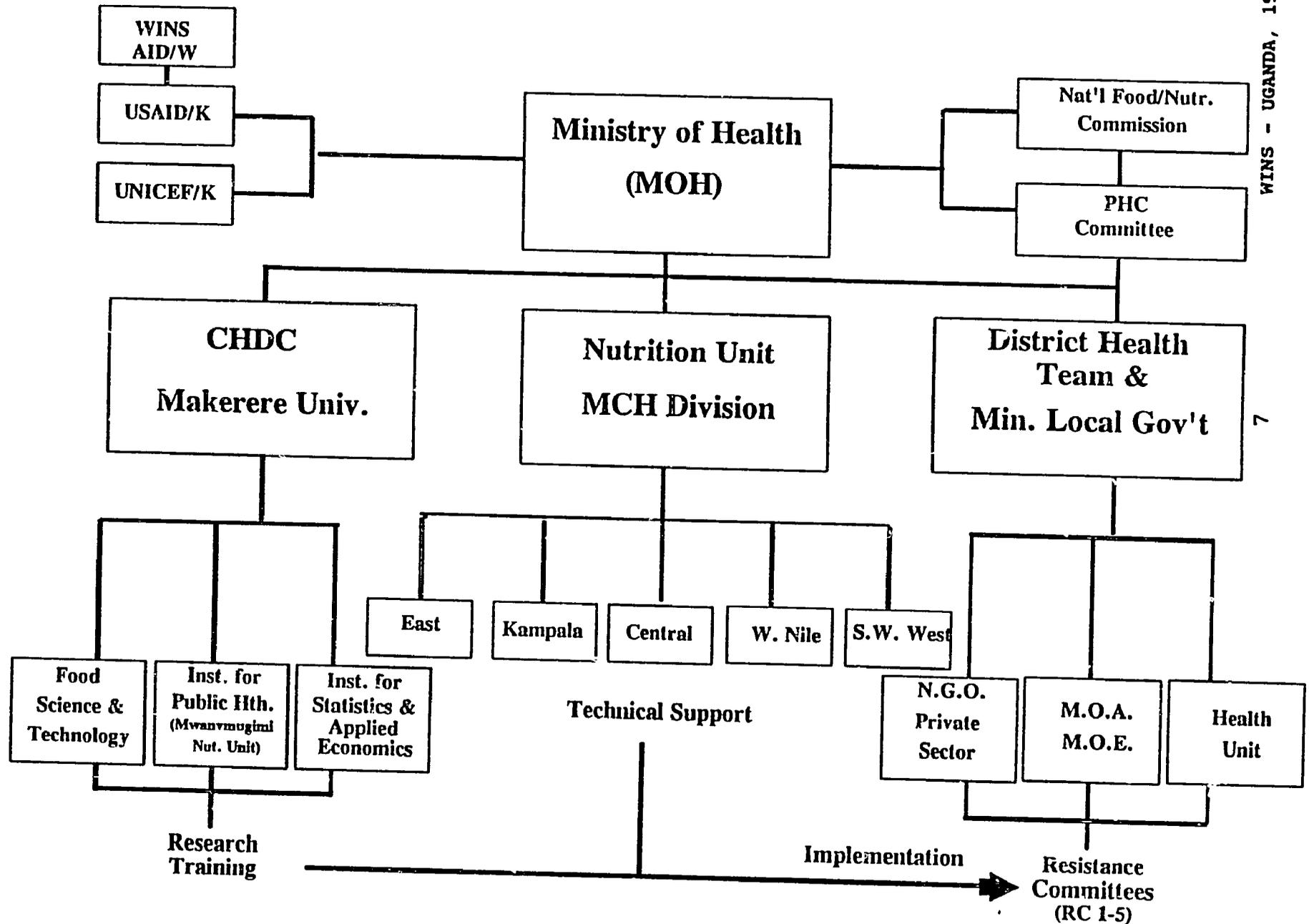
II. METHODS- THE RAPID ASSESSMENT PROCEDURES (RAP) APPROACH

The methodology consisted of rapid assessment procedures (RAP) for nutritional analysis at multiple levels: national, regional, district, sub-county, parish, community and household (Teller, 1990a, b; Teller and Owour-Omondi, 1991; Schrimshaw and Hurtado, 1987). A review of literature as well as a document search were carried out and meetings with major nutrition donors (USAID, UNICEF, WHO), MOH policy makers and programme managers, NGO and private sector and university personnel.

The WINS team spent a week in each of two high malnutrition prevalence areas of the country, the Eastern District of Iganga

Figure 1

Institutional* Framework WINS Assessment Uganda 1992



(the most populous district in the country) and the Southwestern District of Rukungiri, where numerous RAP qualitative and quantitative methods were implemented with the participation of district-level counterparts and the RC 1-3 system. Figure 2 presents an outline of the methods, their number of applications, and the sample sizes of persons screened.

Figure 2

**THE WINS UGANDA NUTRITION RAPID ASSESSMENT PROCEDURES (RAP)
METHODS AND SAMPLE SIZES, SEPT. 1992**

I. Levels

	<u>Sample Size</u>
1-National	1
2-Regions	2
3-Districts	2
4-Sub-counties	6
5-Parishes	6
6-Communities	12
7-Households	32

II. Methods

	<u>Number</u>
1- Case Control Histories	32
2- Observation points of service delivery	26
3- Semi-structured group meetings	8
4- Formal focus groups	7
5- School height censuses	4
6- Maternal anthropometry screening	4
7- Infant/child anthropometry screening	1
8- Food security (markets, millers) assessments	3
9- Review of the literature (over 100 sources)	2

III. Other RAP Opportunities

- 1- Spontaneous small groups
- 2- Key informant interviews
- 3- Available data/records analysis

Some 691 persons were screened using anthropometric procedures, including 368 children under two, 193 school children 5-8 years old, and 134 mothers. Numerous in-depth case histories, focus groups, group meetings and multiple observation sites (eg., home, market, clinic, school, etc.) were employed at all decentralized levels.

The RAP approach, as applied in this exercise, is designed for timely and participatory assessment of the nutrition situation with emphasis on appropriate follow-up action (Teller, 1990b). The data instruments should be developed together by the team, with emphasis on applicability for accomplishing the data gathering within an abbreviated timeframe. However the validity, reliability and appropriateness of the data should not be compromised by making the process "too quick" or "too dirty".

Figure 3 presents the sequence of RAP methods carried out during this three week period. The point of departure is the conceptual framework developed for the analysis of the UDHS (Figure 4).

Figure 3

WINS RAP METHODS

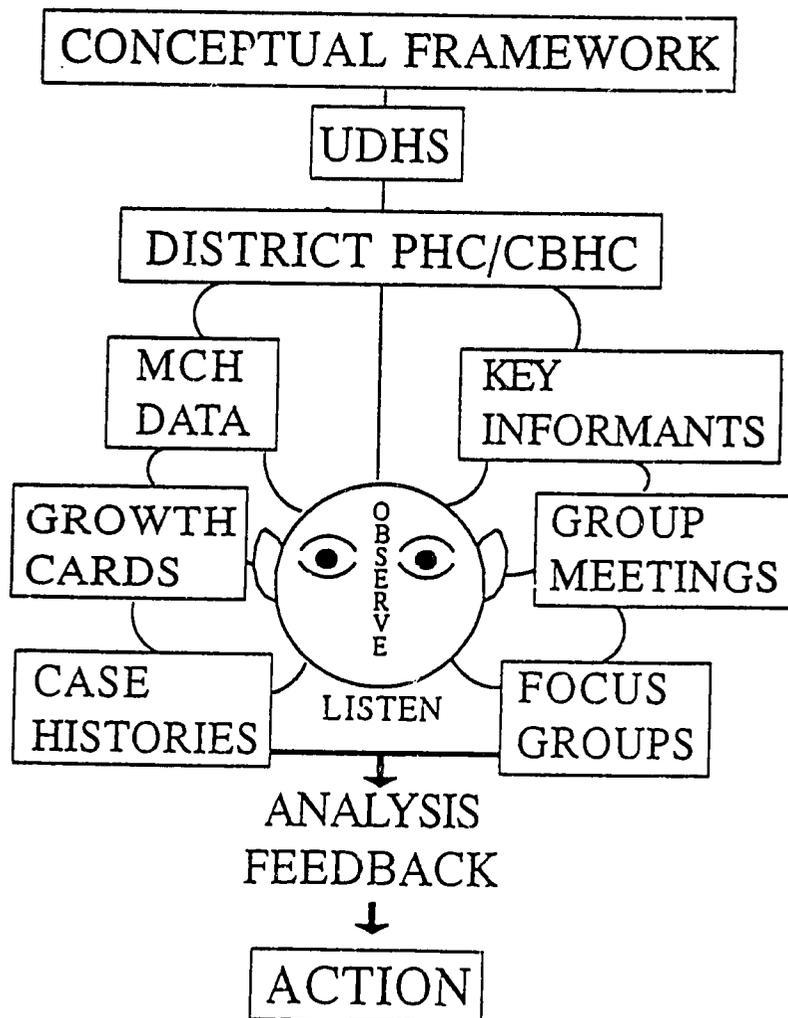
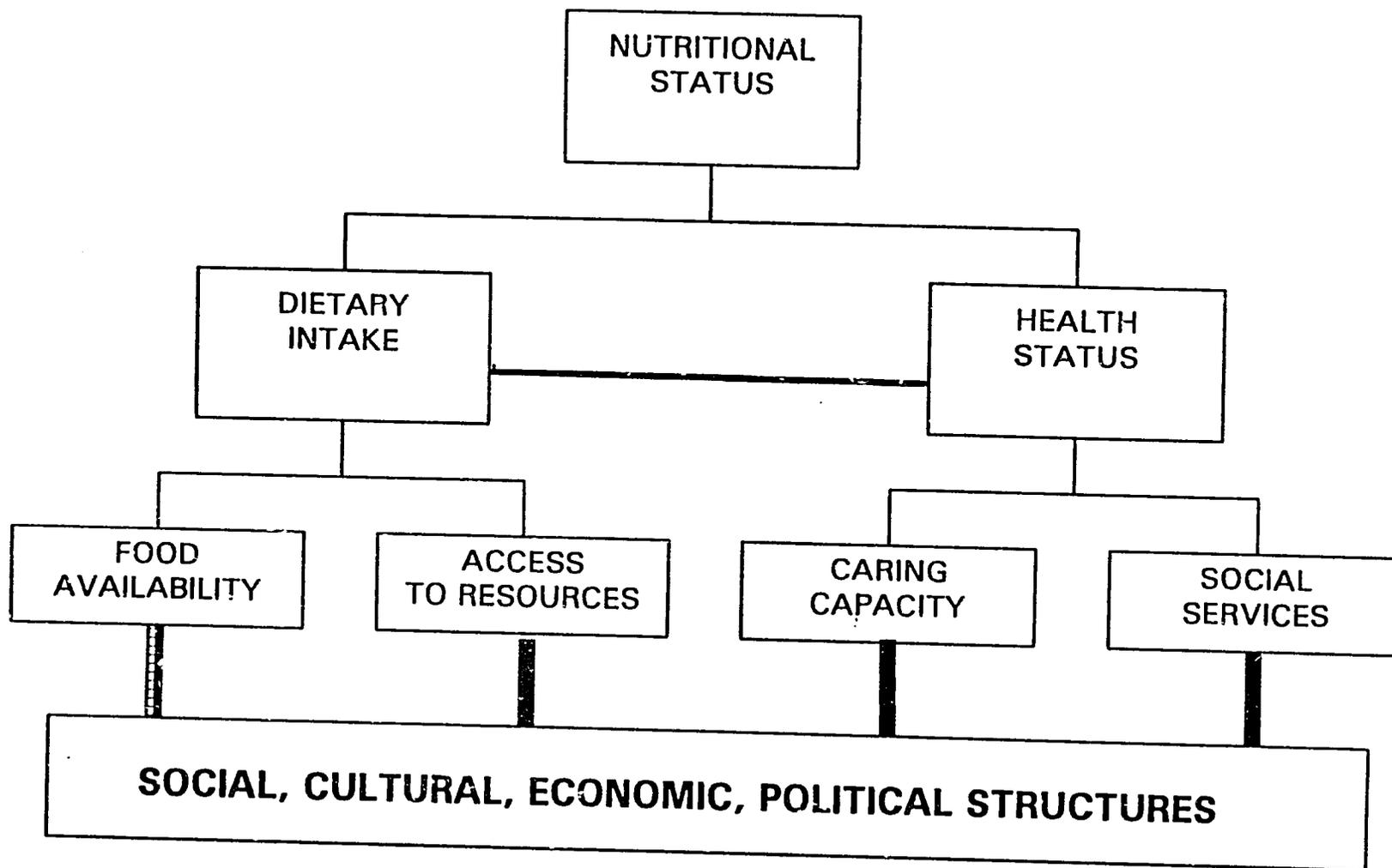


Figure 4
CONCEPTUAL FRAMEWORK FOR NUTRITION
UGANDA



Source: Jitta et al 1992

The in-depth UDHS analysis permitted the identification of high prevalence regions and characteristics of families with malnourished children (Jitta et al, 1992). The Southwest and Eastern were two of the three highest prevalence regions, with the West Nile as the other high prevalence region. Time permitted implementing the RAP in the closer Eastern Region, and the presence of CHBC and DMO interest were the rationale for selection of Rukungiri.

Within each district, Parishes were selected where there were already established entry points into the community, either through CBHC or through EPI outreach clinics and CDD home visits. In Rukungiri where there are nearly 10 parishes to choose from, we selected one where the DHMT suspected a lot of malnutrition; another, where there was regular growth monitoring (Kisiizi); and a third which was the most highly mobilized CBHC district. The team spent one full day in each parish.

The case control histories were selected on the basis of the established growth pattern of the infant or young toddler (see Annex for instrument). Three types of growth patterns established on the child health cards were actively searched for: a positive or steady upward growth pattern; a negative or declining growth pattern; and a recuperative or up-down-up pattern. As figure 3 suggests, these three patterns were selected at EPI outreach clinics if there was regular growth monitoring and plotting, or, if not, by house-to-house visits in the company of the RC and the CHW.

The areas selected are shown on the map in figure 5. In Buruba Parish, Iganga, where the nearby Mission hospital does regular weighing, the infants were selected by observing child health cards during home visits in two villages. In Bulamagi, Iganga, one village did the same as above, while in the other, a well-mobilized EPI outreach netted the team over 54 children from which 6 were selected for their contrasting growth patterns. Here, however, very few under-twos had ever been weighed nor weights plotted before. In Kisiizi and Bugangari, the static MCH/EPI clinics were doing regular weighing and study children were selected from those in attendance, while in Kichwamba, Kasiindiro and Ruhinda, the RCs, CDA and VHWS led the team to identify infants with the varying growth patterns.

Mothers were identified for anthropometric screening in various locations: antenatal clinic (Kisiizi); hospital maternity ward (Rukungiri town); hospital paediatric ward (Buluba); EPI static clinics (Iganga and Bugangari); and their measurements during home visits. Infant lengths were also taken in the hospital and the Bugangari EPI clinic.

Primary P-1 schools were selected in areas where CBHC or growth monitoring was taking place. After the children left the opening

Study Limitations

RAP methods do have their limitations, and this study is no exception. The following limitations in this study should be cited:

1) Short time frame: this particularly affected the design, pre-testing and interviewer (N=3) standardization of the case history method; the three interviewers were far better prepared for the second district. Also this precluded the team's selecting a more isolated area in Iganga.

2) Lack of child health cards with weight records in numerous parishes: the sample was restricted to those parishes where at least some weighing and plotting on child health cards was being implemented.

3) Multiple languages: interpreters were needed for most of the case histories, community meetings and TBA interviews in Rukungiri District (several Ankole languages); some of the interpreters were also extension workers (CDA, HA, CBHC trainer, etc) and might have influenced some of the interaction. In Iganga, the mix of Busoga and Luganda speaking interviewers worked well.

4) Neglect of focus on maternal and birth weight measurements and school height anthropometry census in Iganga: The discovery of the importance of these measurements occurred in the first field trip (Iganga), and thus were more under-represented than in the second district (Rukungiri).

5) Small sample sizes: several factors contributed to small numbers; the tedious process of selecting different growth patterns, and time-consuming nature of case histories. The maternal and birth weight samples were small as their importance was discovered once in the field.

6) Small number of Districts sampled: only two districts were selected, as these were the two DMOs most interested in addressing the nutrition situation. Thus the study cannot be generalized to other major regions of the country (i.e., West Nile, Central and North/Northeast).

7) Retrospective investigation of growth faltering: the growth records were used to probe the recent periods of growth faltering and catch-up growth and the factors related. Thus mothers may have better recall on factors such as major illness than on other types of determinants.

III. RESULTS: PREVALENCE OF INFANT AND MATERNAL MALNUTRITION

The WINS assessment confirms the UDHS findings and previous surveys of very high levels of chronic undernutrition, with higher levels in the Southwest, and early growth faltering:

1- The school height census documented a wide range of past stunting, from nearly 70% in the rift valley of North Central Rukungiri (Bugangari) to only 10% in the elite private school (Universal) in Rukungiri town (figures 6, 7).

Figure 6

**Prevalence of Stunting, Prim.1 (ages 5-8)
Some Schools, Iganga, Rukungiri Sept. 1992**

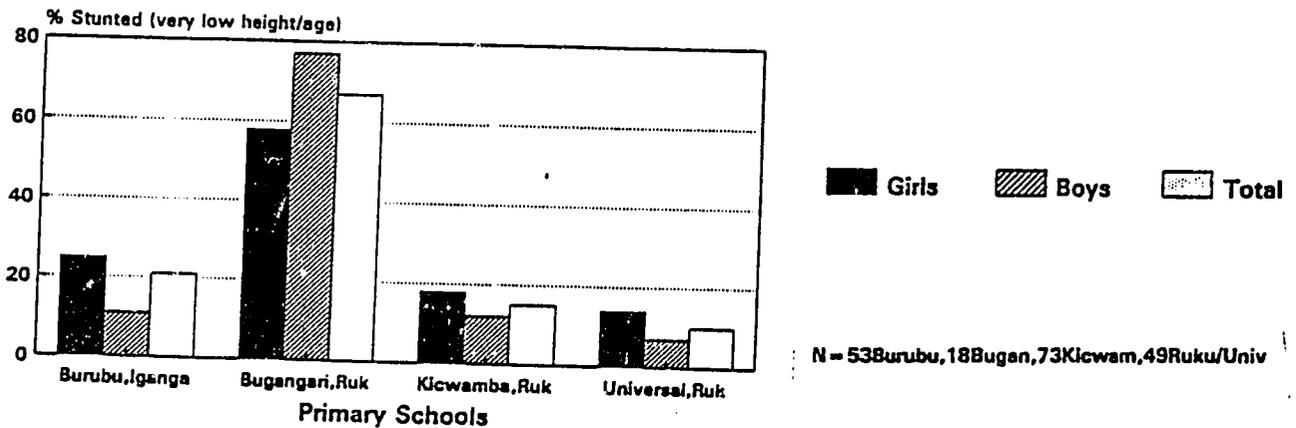
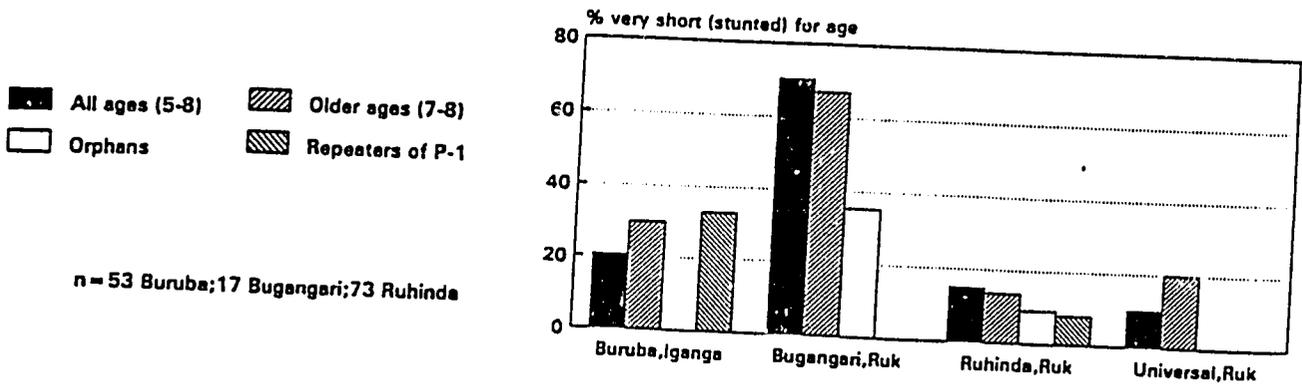


Figure 7

**CHRONIC UNDERNUTRITION OF P-1 CHILDREN
ORPHANS & REPEATERS, IGANGA &
RUKUNGIRI, 1992**



Older P-1 students and those who had to repeat P-1 were more malnourished in Buruba and Universal schools than their younger classmates.

2- Longitudinal growth monitoring data from child health cards at over a dozen urban and rural sites in this study and others show that much of the growth faltering begins between 4-6 months of age, and peaks early in the second year of life (Zimbe, personnel communication, 1992; Teller and Mudusu, 1989)

3- Close associations were found between anthropometric measures of mid-upper arm circumference (MUAC), stunting (very short for age) and poor incremental weight gain (see below).

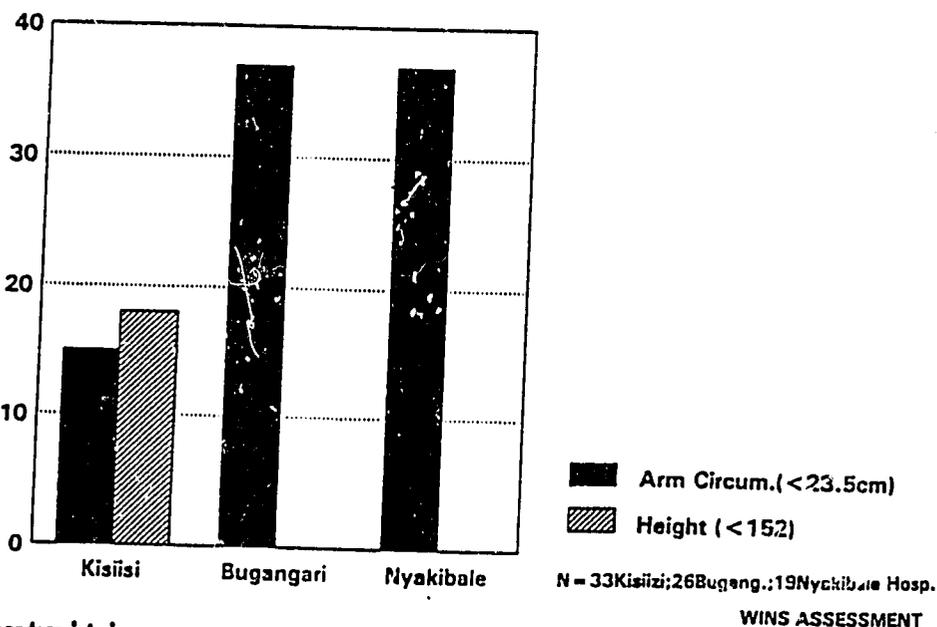
4- Maternal malnutrition was found to be high: between 20% in Iganga to nearly 40% in selected Rukungiri sites (figure. 8).

5- Other nutritional problems of anaemia and goiter were also found to prevail in women, particularly in the Southwest.

Figure 8

MATERNAL NUTRITION STATUS

Selected Sites, Rukungiri, Sept. 1992

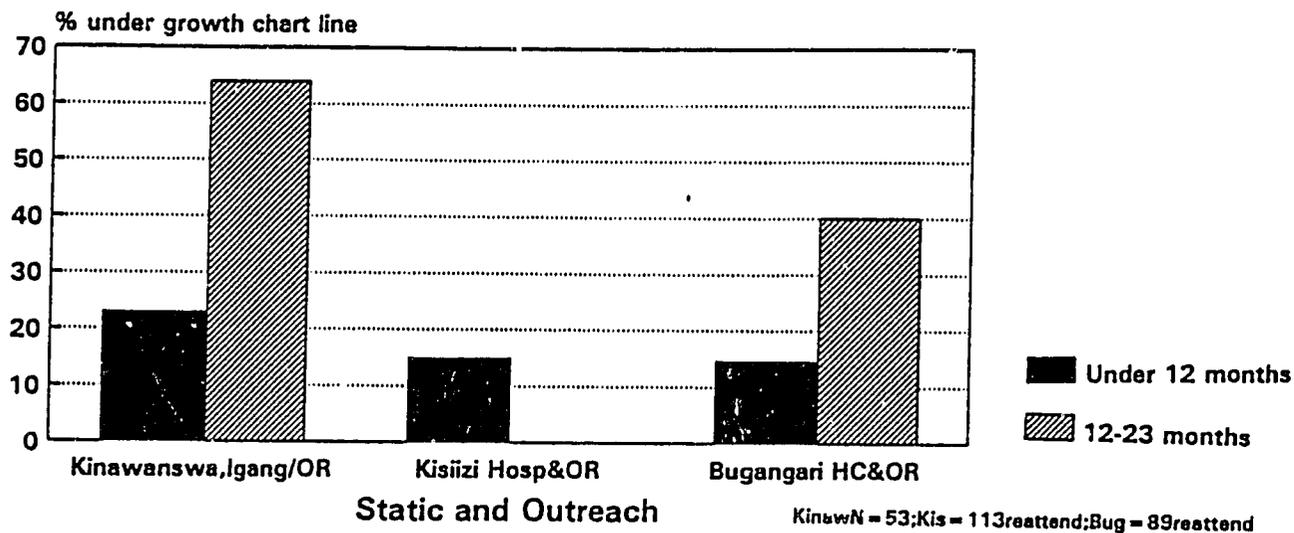


Infant Malnutrition

The prevalence of underweight children as observed in the EPI clinics and MOH information system is artificially low because most of the children are under five months of age, a period when most growth faltering has barely begun. Levels of underweight in the second year of life are around three times as high as in the first year (see figure 9).

Figure 9

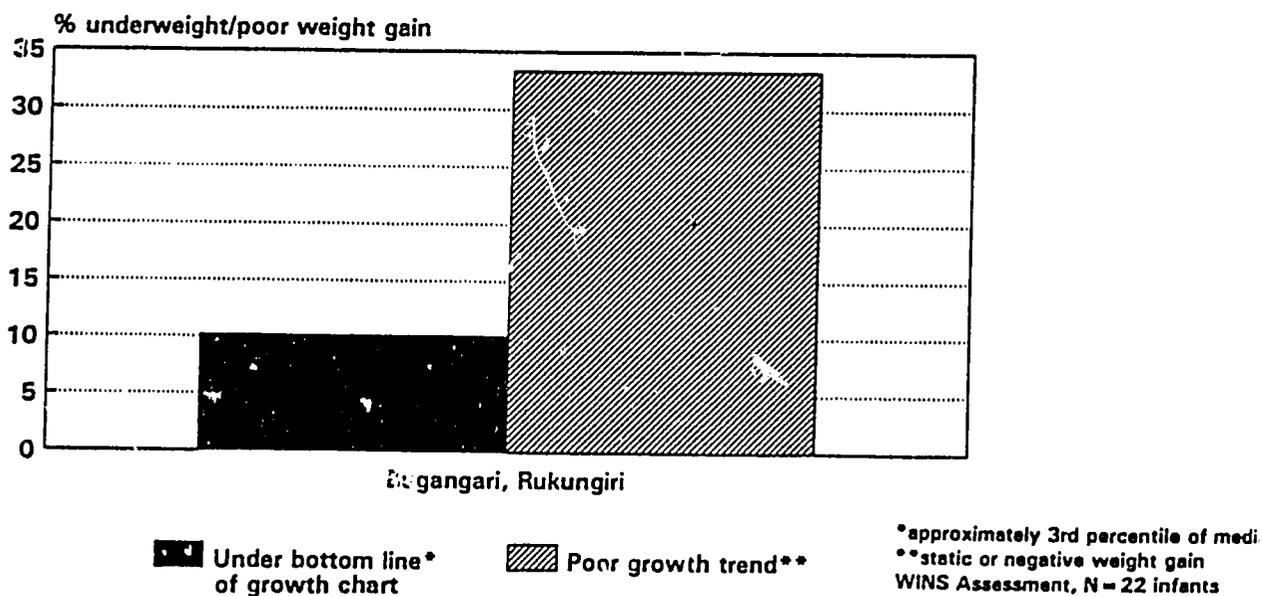
Percent Underweight, Sept. 1992 Some MCH/EPI sites, Iganga & Rukungiri



Even within the first year of life, the MOH data on underweight underestimates the percentage of children who are already in a growth faltering pattern. In Bugangari, for example, only 10% of the children observed were underweight (below 3rd percentile), but 33% were already growth faltering (see Figure 10).

Figure 10

Underweight vs. Poor Growth Trend EPI Clinic, Under Ones, Sept. 1992



In Kisiizi, only 5% of the EPI attendees were underweight; this rose to nearly 10% if only re-attendees were included. However, it goes up to 40% in the few children over two who attend.

Maternal malnutrition

Methods

Maternal malnutrition prior to and during pregnancy and lactation may affect the infant's size at birth and the mother's ability to lactate optimally. Pregnancy weight gain, maternal height, weight and arm circumference have been used to assess maternal nutritional status. Weights or heights were only being obtained being obtained sporadically, so pregnancy weight gain, height or weight status were not available from records of women observed in either Iganga or Rukungiri districts.

In a rapid assessment method mid-upper-arm circumference (MUAC), which correlates very highly with body weight and body mass index, was used as a practical measure. Also maternal MUAC was found in a WHO collaborative study to be a good predictor of low birth weight. Arm circumference is also a measurement which could be performed by CHWs and/or TBAs.

An antenatal clinic was visited in Kisiizi Hospital in Rukungiri District. The women attending antenatal clinic may not be wholly representative of the women living in the surrounding rural areas. These may be women with high risk pregnancies and/or they may represent women who are of higher social economic status than the general population, being able to afford to pay the missionary hospital fees. Women began attending the antenatal clinic generally during the 2nd trimester.

Women in various stages of pregnancies attended and 33 out of 50 were accessible for measurement. If a very short woman (under 150cm) was found she was measured and classified to be "at high risk" although the midwife was not certain about the exact height-cut-off. Scales with a height stick were available in the clinic but rarely used.

Also in Rukungiri District in the Nyakibale Mission Hospital maternal MUAC was determined in 19 women who had just delivered infants. In a static EPI clinic in Rukungiri (Bugangari), which mainly sees infants in the first year of life, maternal MUAC was determined on 26 mothers.

Measurements

MUAC was obtained (left side) at the mid- point of the upper arm and height was obtained. The cut-off point used for malnutrition (PEM) for MUAC was ≤ 23.5 cm and for stunting height ≤ 152 cm. (5ft)

was used.

Women were examined by Dr. Neumann for presence of goiter by visual inspection, palpation and by the WHO 0-4 grading scale.

Findings: Maternal Nutritional Status

The above findings using arm circumference and height, show that maternal malnutrition is present.

Based on low arm circumference, 15% of women in Kisiizi, 30% of women in Bugangari, 37% of women in Nyakibale hospital, 24% in Buluba hospital, and 11% of the case study mothers were malnourished (see table 1). As for short stature (≤ 152 cm, 5ft.) about 20% of women at Kisiizi Hospital were noted to be stunted. The association of maternal MUAC and birth weight is shown in a small sample. Low birth weight was more prevalent in those with MUAC ≤ 23.5 cm (see table 2).

Table 1

MATERNAL NUTRITIONAL STATUS Rukungiri District

Maternal Nutrition Status	Kisiizi Hospital Antenatal clinic n=33	Bugangari EPI static clinic n=22	Nyakibale Maternity Ward n = 19
% with arm circum. (AC) ≤ 23.5	15%	37%	37%
% with Height ≤ 5 ft. (152cm)	18%	--	
% with Goitre (WHO grading 0-4)	--	27%	
4/5 women with low AC were stunted and 2/3 of stunted women had low AC			

Stature ≤ 152 cm (≤ 5 ft) places women at an increased risk for labor and delivery complications. Cephalo-pelvic disproportion is relatively common in areas of widespread malnutrition.

Because Iganga, Kisiizi and Nyakibale Hospitals are referral centres there is a higher caesarean section rate than expected in the general population, 12.3% and 13.3% respectively. The caesarean section rate may represent the presence of obstructed labor secondary to cephalo-pelvic disproportion. Small pelvis in mothers (PEM) may reflect PEM with stunting earlier in life. Other explanations include high rates of adolescent pregnancy and use of traditional herbs of "speed" up labour and delivery.

Table 2

**ASSOCIATION OF MATERNAL ARM CIRCUMFERENCE AND BIRTH WEIGHT
Nyakibale Hospital**

Birth Weight Status	Low Maternal AC (n=7)	Normal Maternal AC. (n=12)
Normal	(2) 29%	(6) 50%
Premature & Low Birth Weight	(2) 29%	(2) 17%
BW 2.5 TO 2.8 kg	(2) 29%	(2) 17%
Still born	(1) 7%	(1) 8%

Based on a goiter rate of over 10% it appears that Rukungiri district has a moderate iodine deficiency problem. Goiter was noted in 23.1% of pregnant women in Kisiizi (from 1 + to 3+ grades) and was casually noted in the other groups of pregnant and non-pregnant women. In a group of Bugangari school girls, three of ten pre-adolescent girls were observed to have goiters (See table 3).

Table 3

**GOITER IN MOTHERS - LACTATING AND/OR PREGNANT
(sample from EPI clinic in Bugangari, Health Centre)**

Percent with goiter	(7/26)	26.9%
Of those with Goiter		
1 + 2 Grades	(3/7)	43%
2 + Grades	(3/7)	43%
3 + Grades	(1/7)	14% (nodular)

Contributing factors to iodine deficiency (IDD) include: reliance on water from mountain streams, leaching of iodine in the soil, use of goitrogenic foods in the diet (particularly cassava and soy) and limited use of iodized salt. Even moderate IDD can result in poor pregnancy outcome and poor growth and learning in children.

Low Birth Weight

Infants born with low birth weight (LBW) due to prematurity may take one to two years to achieve normal size if postnatal conditions are favorable. Long-term follow-up studies on infants around the world who have undergone intra-uterine growth retardation (IUGR) show little if any catch-up growth. Not only are these infants of low birth weight but they may also have decreased length. The stunting reported in the DHS study (1989) of infants in the first year of life, particularly that seen from 4 to 12 months may partially represent this group.

In the reports cited below, there is no attempt to distinguish LBW infants who are pre-term from those LBW due to IUGR except in summary statistics from the health planning unit, MOH, which reports maternal and newborn statistics from selected district hospitals and uses the categories of LBW and prematurity (table 4).

Tab 4.

SELECTED ANTENATAL, PERINATAL AND BIRTHWEIGHT DATA

	Hospitals	Districts
Total Mothers	25,376	60,256
Percent with antenatal care	26.5	15.6
Total Deliveries	16,54	32,701
Perinatal deaths	22.8	12.4
Low birth weight per 1000 live births ($\leq 2500\text{gm}$)	17.8	12.2

From the Health Information Quarterly (September 1991) the Health Planning unit of the MOH data is reported from 15 hospitals and districts. It appears from table 5 that the predominant cause of LBW is IUGR.

IUGR is associated largely with maternal malnutrition and/or infection, particularly placental malaria. It is also possible that the higher LBW rates in Masaka and Iganga could be associated with maternal HIV infection.

Table 5

LOW BIRTH WEIGHT AND PREMATUREITY* FROM SELECTED DISTRICTS

	Livebirths	Overall all LBW	% Premature	Est. IUGR
Kitovu	660	32.3	8.3	24.0
Bugiri	767	7.2	7.6	0.1
Nsabya	8168	1.0	3.1	0
Iganga	2092	30.0	2.5	27.5
Gulu	1380	13.0	1.0	12.0
Entebbe	1528	3.8	2.4	1.4
Masaka	368	28.0	10.3	17.7
Arua	932	7.3	3.3	4.0
Total of all Districts	18522	17.9	5.0	10.8

* Includes pre-term and IUGR (Intra-uterine Growth Retardation) Crude estimates - no Gestational age known.

Review of Current Pregnancy Outcome Information in Iganga and Rukungiri Districts:

For rapid assessment purposes birth weight data can be obtained from maternity unit Birth Log Books.

Iganga hospital serves the most populous district; it covers Iganga town and the adjacent area and is a referral hospital for the district. From the maternity unit registry of births in September, 1992, a 50% sub-sample was selected representing all months. In analysis of LBW by maternal age in Iganga, a 12% sub-sample was examined. LBW infants (≤ 2500 gm) and newborns weighing 2501-2800 gm were included, as they represent sub-optimal birth weight and also reflect maternal nutritional level. Similar rapid assessments of birth weights were carried out in Kisuzi and Nyakibale Hospitals in Rukungiri District (See table 6).

Table 6

**ANALYSIS OF BIRTH WIGHTS
BASED ON HOSPITAL RECORDS**

	n	< 2500 gm	2,501 - 2800 gm
Iganga Hospital (Jan-Sept., 1992)	702	11.8%	12.3%
Kisiizi Hospital Rukungiri District (Jan-Sept., 1992)	432	10.4%	18.8%
Nyakibale Hospital Rukungiri District (Jan-Sept., 1992)	202	11.9%	11%

Low birth weight was examined by maternal age groups to see if LBW or suboptimal weight infants (2,501-2,800gm) could be attributable to very young women. The percentage of LBW infants in women 17 years or less was 16% versus 0% in mothers over 17 years of age. (see table 7)

Table 7

BIRTH WEIGHT GROUPS BY MATERNAL AGE IN IGANGA

Maternal age group	≤2,500	2,501 - 2,800 gm
All mothers (14 to 40)	12%	12%
Mothers 14-17 yrs	16%	6%
over 17 yrs	0	22%

* mean birth weight 2,800 gm

IV. DETERMINANTS OF INFANT GROWTH FALTERING

Methods

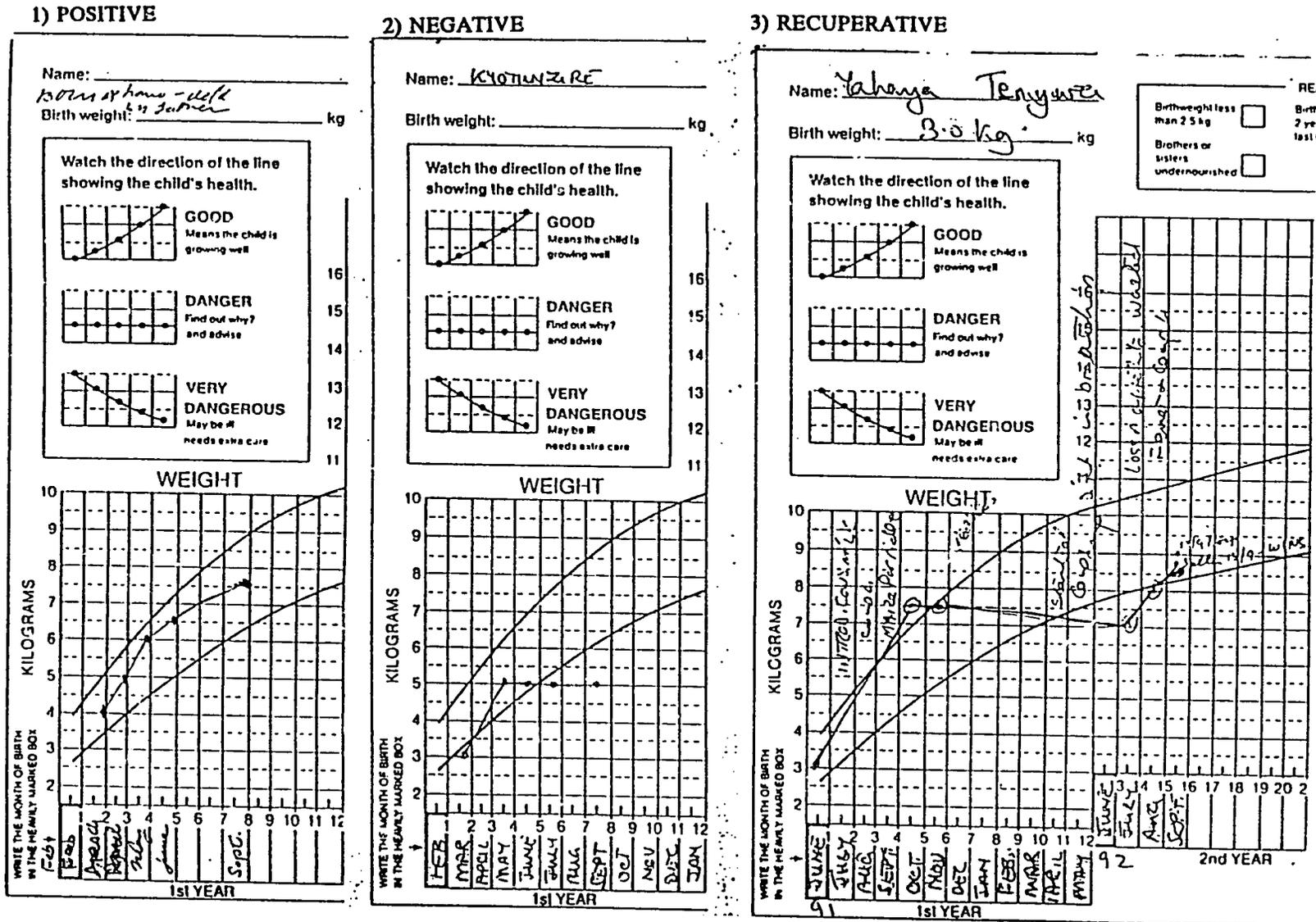
The underlying and situational determinants of early growth faltering were studied in depth through the case control method. Particular emphasis was placed on specific periods of weight loss or levelling off (the "valleys" on a growth card) and on recuperative periods (the subsequent "peaks"). The focus here is on observing the actual pattern of growth in the first year or two and identifying key factors that influenced the pattern (in a negative, recuperative or in a generally positive direction). The interviewers were to probe, observe and discuss in depth the main factors (from the conceptual model) that influenced these patterns of growth model. (The guidelines are presented in Annex II and III). Thirty-two households and their under-two index children and mothers were home-visited at length. Approximately one-third of each were selected to have either positive, negative or recuperative (or irregular) patterns. An example of each of the three main patterns is shown in figure 9.

The nutritionist/investigators went through an analytic exercise in order to come up with key underlying and conditioning factors:

- 1- Coding each case history, including ordinal and relative summary ranking of important nutrition-related factors such as a) resources to satisfy basic minimum food and other basic needs; b) maternal time for child care; c) Food preparation/weaning food/feeding situation; maternal competence/confidence; d) husband/wife communication/decisionmaking on intra-household allocation of resources.
- 2- Classification of the index child's growth pattern into four: positive, negative, recuperative and indefinite/unknown.
- 3- Identification of up to three underlying and situational factors that most contributed to maintaining a positive growth pattern, or to influencing the upward trend of the recuperative growth pattern; and up to three situational factors that most contributed to the major "valley" or "valleys" in a negative growth pattern. Four children had unknown/indefinite patterns, having never been weighed or only once previously.

Examples of the Three Different Infant Growth Patterns

Figure 9



Findings

Table 8 summarizes the main socio-demographic and epidemiological characteristics of these households:

Table 8

WINS UGANDA CASE CONTROL HISTORIES SOCIO-DEMOGRAPHIC AND EPIDEMIOLOGICAL CHARACTERISTICS

<u>Characteristic</u>		<u>N</u>	<u>%</u>
Households:	Iganga	18	56.2
	Rukungiri	14	43.8
Mother's age:	20 and under	8	25.0
	21-34	21	65.6
	35 and over	3	9.4
Index child's age:	5-12 months	14	43.8
	13-27 months	18	56.2
Under 5's in household:	2+	15	46.9
Marital status:	single/separated	4	12.5
	polygamous	4	12.5
Mother's literacy:	illiterate	9	28.1
Mother's malnutrition: thin mid-upper arm circumference		5	15.6
Occupation head household:	peasant	17	53.1
Household's resources (minimum diet/basic needs); can be met:	all year	7	21.9
	seasonally	11	34.4
	rarely	14	43.8
Intra-household allocation/management of resources for food security, nutrition, health:	high	8	25.0
	medium	11	34.4
	low	13	40.6
Index child's malnutrition:	underweight/age	13	40.6
Index child's growth pattern:	Positive	11	34.4
	Negative	10	31.2
	Recuperative	7	21.9
	Unknown	4	12.5

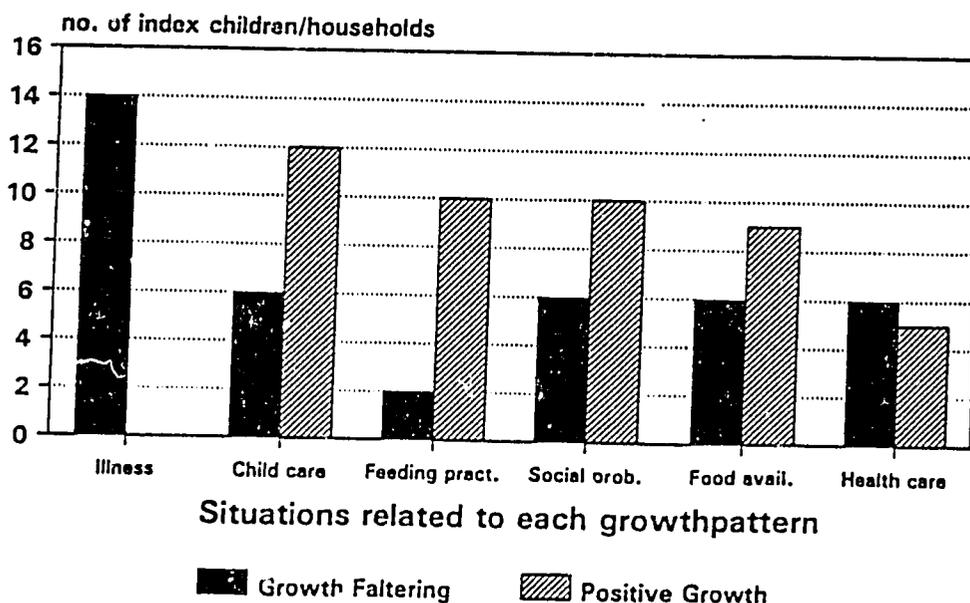
1- MOTHERS: 25% were 20 years of age and under; 28% were illiterate; 12% were single/separated and another 12% were in polygamous unions; 15.6% were malnourished (≤ 13.5 cm on MUAC); and 28% had to work as casual laborers to get enough food.

2- YOUNG CHILDREN: 44% were from 5-21 months of age, and the other 56% were between 13-27 months; 41% had low weight for age and 53% had negative growth patterns. Of those with growth faltering, 41% were on a recuperative trend.

3-HOUSEHOLD RESOURCES: 53% of the male heads of household were peasant farmers; 34% were not able to meet their food and other basic minimum needs seasonally and another 44% were assessed as being chronically (i.e., most of the year) food insecure; intra-household management of resources was judged (by the criteria listed in Annex II) to be high in 25%, medium in 34% and low in 41%. Thus poverty, either seasonal or all-year round, was prevalent; 44% of the households were unable to meet their minimum dietary and other basic needs.

In all 32 index children, 18 negative "valleys" were identified (14 in negative patterns and 4 in the initial pattern prior to a recuperative pattern), and 18 positive trends. Figure 12 presents a listing of the main factors analysed to be related to the 18 growth faltering "valleys".

Figure 12
MAIN DETERMINANTS OF YOUNG CHILD GROWTH
 HOUSEHOLD CASE HISTORIES,
 IGANGA/RUKUNGIRI



N = 32 under-tuos; up to 3 determinants identified for each pattern; WINS

The leading factor, by far, was major illness: in 14 of the 18 valleys illness was a major determinant. Other important factors in growth faltering were food unavailability, inadequate child care, poor and utilization of health care, and social/family problems.

Surprisingly, breastfeeding practices and the quality and timing of early supplementation were relatively less important factors influencing early growth faltering in these 32 rural households (figure 12). Among the 18 positive and recuperative patterns, however, appropriate (per opinion of participating Uganda nutrition experts) feeding practices and absence of severe illness were among the most important situational factors, along with good child care, and adequate social and family support. Very good breastfeeding, (self perceived) combined with adequate quality supplementary foods and protective child care appear to have helped to buffer many of these infants from early growth faltering.

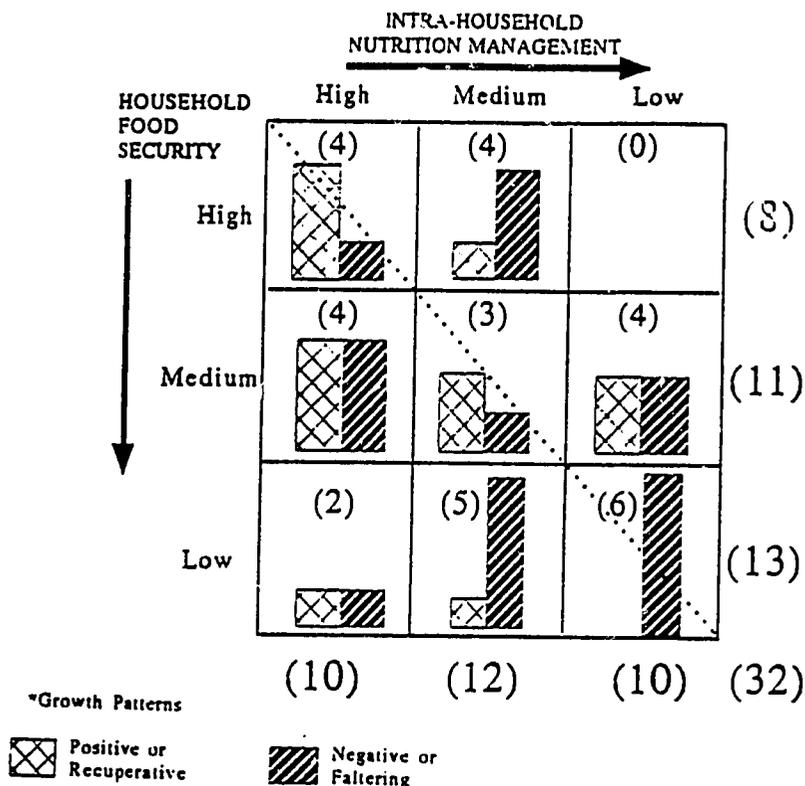
The investigators also looked at overall satisfaction of basic minimum diet and other basic needs, and the overall management of the infant's growth pattern. The 32 case study households were ranked (high/medium/low) on both household food security/basic minimum needs and intra-household allocation and management of resources for nutrition, and these were associated with growth patterns. A 3 by 3 matrix (figure 13) compares the families ranked (high, medium and low) on the basis of meeting basic food and other minimum needs all year round, most of the year (seasonally), and rarely. This is matched with a subjective ranking of the quality of intra-household resource allocation and management to sustain a healthy and well nourished infant, as compared to other mothers in that same parish. Factors assessed were women's time and task allocation, her child care and hygiene, her maternal self-confidence, and any other family support or unusual social consideration.

Of the 32 households, 10 ranked high, 12 medium and 10 low on nutritional management, while 8 were high, 11 medium and 13 low on satisfaction of basic minimum needs (figure 13). All six households which ranked lowest on both rankings had negative child growth patterns; the four which ranked highest on both factors had children with positive or recuperative patterns. Households in between and on either side of the diagonal had mixed growth patterns, some showing good growth in spite of tremendous constraints.

There are programme implications to this type of analytical matrix. The health and social sectors have the capacity to help mothers and households move from the right hand towards the left hand intra-household management boxes. The economic, employment and agricultural sectors can help raise the households from the bottom to the higher boxes. The lower right hand box (eg., low/low) is the most intransigent type of household, and their targeting is

Figure 13

YOUNG CHILDREN'S GROWTH PATTERNS*
BY HOUSEHOLD FOOD SECURITY
AND INTRAHOUSEHOLD NUTRITION
MANAGEMENT



Source: WINS Assessment, 32 Households with index child under two

probably more the responsibility of the RCs than of the above sectors.

The low (poor) resource and low management group will require a combination of nutrition and health education as well as improved income to improve their status in this matrix. This group may not be the best to start with as results are very long in coming.

Individual Determinants

Focus groups, group meetings, multiple observations and key informant interviews supplemented the case study information. They also provided careful, in-depth discussion and community consensus-building on certain key issues, such as: health status; husband-wife decisionmaking on intrahousehold allocation, control and management of resources; health care utilization; maternal and child caring capacity and woman's workload; feeding practices; social and emotional problems; and household food security.

Important differences were found between rural Iganga and rural Rukungiri. The greater difficulties in the latter help to explain higher levels of chronic undernutrition in that district.

1. Health Status

Both districts were concerned with the high prevalence of diseases, especially sanitation-related diseases among children such as worm infestations, diarrhoea, recurrent fever (particularly malaria); backache and lower abdominal pains and fever among women, and sudden attacks of fever leading to deaths especially of fathers and orphans (eg., meningitis epidemic).

Illness due to measles was found to be a major determinant of poor growth among 53% of the 17 children with current or past growth faltering periods. Fever (presumably malaria) and diarrhoea were the other most common illnesses.

Among these 17 children with current or past negative growth patterns, 59% were reported to be currently sick, suffering from fever, diarrhoea, worms and anaemia. Three mothers of the same children had fever and anaemia.

Malnutrition (mid upper arm circumference \leq 23.5 cm) was found among 60% of mothers with children having a currently negative growth pattern. None of the mothers of the children having recuperative or positive growth pattern were found to be malnourished.

2. Health Service Utilization

Health facility accessibility in both districts was poor; and mothers found transport to these facilities expensive.

Government health facilities were in some cases considered inefficient and unfriendly, particularly at static units. Mothers found health staff at outreach units more understanding, although sometimes the services were limited.

Private health care services were widely utilized and more accessible. They had better quality and efficient services and drugs were readily available though very expensive. People therefore resorted to buying drugs from shops where there was no expert advice.

District medical services were reported to have limited operational funds, few trained staff and inadequately supervised workers.

All mothers were aware of the child health cards; in Rukungiri district more infants had been immunized appropriately for age compared to Iganga district where the age at which immunisation started was late, and varied among the infants. Growth monitoring

or weighing of children was regularly done at the immunisation sites (EPI units) in Rukungiri district while in Iganga district weighing and plotting of the child health card was done mainly at the government and mission hospital static (EPI) units. Counseling of mothers was not carried out efficiently in all districts.

Most mothers with children who had frequent episodes of illnesses sought medical care. The mothers found management of these difficult and were often not able to afford medication. This factor was evident among 76% (10/17), of children with negative growth patterns (5/7, recuperative growth, 8/10 negative growth pattern). Where mothers could not afford to buy drugs they went and utilise traditional medicine.

Mothers thought that they had too many children and did not have the capability nor resources to effectively take care of them. They felt that there was wide spread poverty and not enough food to go around. Friends had cautioned against the use of family planning methods, saying they would get sick if they ever used the advocated methods. The mothers are however concerned and would like to limit the number of children they have.

3. Child Care

Almost all mothers in a focus group in Iganga and parents at the Parents Teachers Association (PTA) meeting in Iganga did not consider child care as an important issue. Women considered it a natural responsibility to take total charge of the child's welfare despite their heavy household responsibility. The lack of effective child care was associated with lack of resources and poverty. Women in Rukungiri claimed that their heavy workload leaves them with very little time to carry out effective child care. They have to be with their children almost all the time, and at the same time hire out their labor to generate income to support their families.

Men's perceived role was to assist women in the provision of resources required for child care. However women and men in both districts agreed that women have too much work to do, possibly reducing time allocated for child care.

Frequent pregnancies significantly affect the quality of child care. Women tend to reduce or cut off maternal care and in many cases send the children away to live with grand parents or other relatives. Breastfeeding stops immediately when the mother realizes she is pregnant and child neglect is not an uncommon occurrence.

None of the mothers of children with negative growth patterns were found to score high on maternal confidence index. All mothers claimed to be responsible for preparing food and feeding their children. Mothers claimed to feed their children at

the time they themselves were having meals.

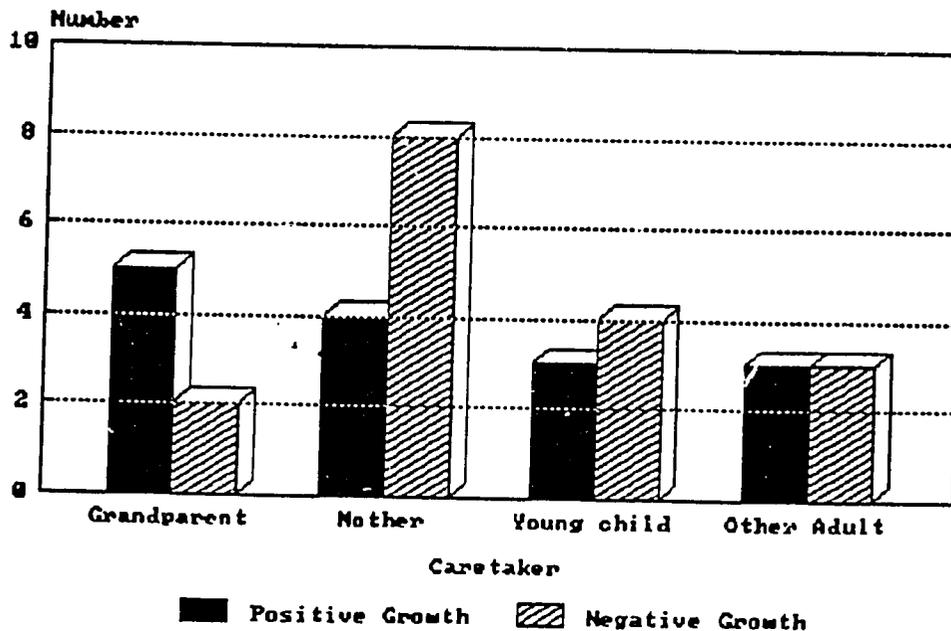
During the assessment hygienic conditions of the homes of children with negative growth patterns were observed to be very poor. The home surroundings were untidy and littered and the children were not kept clean. Kitchen facilities were very poor with cooking and feeding utensils and material scattered around.

Mothers had different members of their communities take care of their children while they were away from their home. Some 'away mothers' were not always fortunate enough to find a person to care of the child while they were away. This necessitated the mother to take the child everywhere she went; to the garden, to fetch water, to visit relatives or even attend funeral.

Figure 14 shows that most (5 of 12) of the mothers of children with negative growth patterns took their children wherever they went, because they did not have any other family member to take care of their children in their absence.

Figure 14

GROWTH PATTERN BY CHILD CARETAKERS (WHEN MOTHER IS AWAY FROM HOME)



The same study indicated that most (5 of 7) children with positive growth patterns had their grandparents take care of them while their mothers were away.

The main factor that kept mothers away from their homes was cultivation. There were occasions when mothers were forced to carry out income generation activities in order to be able to support their families. Casual labor (digging other people's gardens for money) was a common practice especially in Rukungiri district. Sale of food was also a common income generating activity in both districts.

4. Feeding Practices

In both districts, breastfeeding is a natural source of the child's initial feeding, and is widely and confidently practiced.

In Iganga and Rukungiri districts introduction of weaning foods earlier than four months was reported. The common reasons mentioned were;

- as a precaution in case of unexpected, forced breastfeeding interruption due to illness pregnancy or separation. The people left to take care of the child would be able to feed the child with any breastmilk substitutes.

- a belief that the poor quality of the milk (diluted breastmilk) was strongly associated with the poor weight gain of a breastfeeding child.

- inadequate breastmilk production by mother which was attributed to heavy workload and poor diet especially in Rukungiri district.

Introduction of solid family food was timely in both districts - around six months of age. Inadequate and limited food intake for family members, especially children, was due to the small number of meals taken daily, i.e., usually just two and sometimes only one meal per day in both districts.

The quality of the food was questionable. Women seemed to lack innovation in utilizing available traditional food commodities for child feeding. Common family foods such as bananas, cassava, rice, millet-bread, and sweet potatoes were sometimes not considered suitable for children. This left little choice as to the type of foods that would be given to young children.

The findings from case histories revealed that the timing for introduction of supplementary foods for children with a negative growth pattern ranged between one to seven (1-7) months of age in both districts.

Diluted cow's milk was most commonly utilised for starting infant feeding, followed by maize porridge. The main reasons for supplementation were accustoming the child early to other foods and lack of adequate milk production by mothers.

Some of the children's meals that were observed being prepared in the households visited were:

1. 200 mls of watery maize porridge for 2 meals with no soya added to the porridge. The meal was available for a girl one and half years of age (1½ yrs), not being breastfed. She had refused breastmilk at 13 months of age when she had measles, and has never re-gained her appetite since.
2. 500 mls of thick porridge for one meal for a child 20 months of age. Sugar was available to be added to the porridge. The child was still being breastfed.
3. A mother had a small piece of cold potato left-over from supper to give to the child aged 11 months when she returned home from the immunisation clinic. The child continued to be breastfed. The mother had no time to prepare lunch.

Factors Associated with Growth Patterns (Weight Gain) in Infants

The most notable differences between infants with positive growth and negative growth patterns were reflected in better self perceived quality and quantity of breast feeding; better maternal nutritional status (judged by arm circumference (MUAC)); greater all year round household food security vs. seasonal security and more salaried work in the infants with positive growth patterns compared of those with negative growth patterns (see table 9). In the recuperative group, the largest percent of mothers reported insufficient breast milk "in 67% as a reason to start supplementation vs. 27-34% in the other groups and 17% vs. 8-9% of the mothers becoming pregnant.

The type of supplemental foods used or the age of introduction did not vary very much among the three groups. Household food security and the general family food supply were probably the most important factors in determining the amount and quality of supplemental food available. Maize porridge, diluted cow's milk and millet porridge were the most commonly mentioned foods used for infant supplementation.

The role of interruption of breast feeding by a new pregnancy was a relatively important factor, particularly in the children who were growth faltered then recovered.

The role of salaried employment as the means to purchase more

Table 9

Weaning/Supplemental Foods and other
Factors Associated with Growth Pattern (GP)¹

	<u>Preventive GP</u>	<u>Negative GP</u>	<u>Recuperative GP</u>
	n=12	n=14	n=6
	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
<u>Breast feeding</u>			
Self-perceived			
- good	100	17	34
- poor	0	75	50
<u>Supplemental Feeding</u>			
When (nos)	3.6	3.8	3.5
Started (mean)			
(ranges)	2-6	2-9	2-5
<u>What was fed</u>			
Maize porridge	42	35	17
Millet porridge	8	0	33
Cow's milk (diluted)	50	50	22
Sweet potato	0	8	17
Cassava	0	5	17
Beans/eggs	0	0	17
"Adult food"	8	0	0
<u>Why first started</u>			
Insufficient breast milk	34	27	67
Get baby used to taking food other than breast milk	52	27	17
Baby wants and reaches for food	12	10	0
Mother becomes pregnant	8	9	7
<u>Maternal Nutrition</u>			
Mid upper Arm. Circ.			
> 23.5	100	42	100
≤ 23.5	0	38	0
<u>Household Food Security</u>			
Seasonal	38	55	34
All year	62	42	33
<u>Salaried Employment</u>			
	55	40	43

¹ Percentages do not add up to 100% as categories are not exclusive.

food for a family points to the importance of income generation. Also noteworthy is the role of maternal malnutrition. All mothers of infants with positive and recuperative growth patterns were along the cut off (> 23.5 cm. MUAC) for PEM. In infants with negative patterns 38% of mothers had low arm circumference indicative of PEM. Pregnancy may interfere with lactation and/or reflect the poor SES and household food supply. All year round food security is important as compared to seasonal food security in supporting positive growth patterns in infants and young children.

5. Social Problems (as observed and/or discussed)

Poverty and lack of awareness about effective use of locally available foods for young children prevented the women from feeding their children well.

Women in both districts were not being entrusted by their spouses, with regard to acquisition and control of family income and other resources like the sale of food crops. Husbands sold the food crops in spite of their wives' refusals.

Husbands were reluctant to allow their wives to attend useful social clubs including EPI clinics. This was more pronounced in Iganga district.

Men's drinking bothered the women to such an extent that these women had to find the money to pay "graduated" taxes to the women or buy clothes.

The situation was more favorable in communities with CBHC where men have agreed on shared responsibility over family resources.

- All three children from polygamous homes had negative or recuperative growth patterns. The favored wife's child had growth faltering because of late diagnosis of tuberculosis. The general living conditions, food security and wealth was not the same. The favored wife tended to have more resources available to her from the husband.

- Mothers whose husbands were working outside the district and only came home once or twice a year had the burden of looking after the home with meager resources.

Many men not only used their money for drinking but often sold food crops or searched for their wives hard earned cash to pay for their beer drinking. This not only make households food insecure but also resulted in family instability. In one instance a mother of an index child separated from the husband and took her children with her. This is likely to have affected the child's growth pattern.

All ten children with currently negative growth patterns came from homes which had seasonal food shortages, even during "normal" years. At the time of visiting, these homes hardly had food in the garden or store. The little that was there, was being sold. In two instances a deposit had already been given towards the food.

6. Household Food Security

Numerous and multiple observations, community development and RC meetings and key informant interviews were held to discuss food acquisition and allocation behavior. The team went into the markets, shops, mills, households and farms/gardens. They observed the division of labor during the present agricultural cycle of planting, weeding and harvesting. Earlier in the year, there had been prolonged dry ("famine") seasons in both districts. In Rukungiri the dry period had extended from Feb. up to July. Records of the local mills show a great reduction in grain milling between May and July, with a big increase in August. RC-1 and local agricultural leaders openly discussed which households were the most food insecure, their coping strategies, and what could be done about food insecurity. Some of the reasons for increased food insecurity this year are:

- 1 Extended period of no rains lasted into the usually rainy season (May-July)
- 2 Need to sell basic food crops, such as maize and rice in Iganga, and millet, beans and matooke in Rukungiri. Prices for the traditional cash crops (eg. coffee) have remained low.
- 3 Physical insecurity has threatened granaries, which often have to be crowded into the home to prevent robbery.
- 4 Land distribution is unequal and worsening in densely populated areas, such as highland Rukungiri.
- 5 Need for increased income to cover such basic needs as school fees, poll tax, clothes and medicines.
- 6 Conversion of staples such as millet in the East and matooke in the Southwest to beer production which is often the main income-generating activity for women.
- 7 Men's predominant role in selling food harvested and spending money is not always supportive of the family's food security needs.
- 8 Areas have high levels of mothers without husbands due to the marital instability, premature death (cerebral malaria, AIDS, TB, meningitis, etc.), unemployment and migration factors.

The harvests in Rukungiri were very poor while Iganga had a bumper harvest of maize. Other foods, however, were in short supply. In both districts, lack of money/cash (poverty) forced people to sell most of their valuable foods. A few food items like millet in both districts and cassava in Rukungiri were regarded as safety foods and were not for sale. Food inadequacy was mentioned as one of the

major contributors to poor nutritional status in Rukungiri, but was not emphasized in Iganga, where there was more concern about the fast rate at which their only available food (maize) was being sold.

It is apparent that other forms of cash/income generating activities apart from food sales might provide a saving of food and improve food security.

7. Husband-Wife Communication/Decisionmaking

In both districts men are the main decision-makers, resource controllers, cash earners and spenders. Even food mainly cultivated by women (especially in Rukungiri district) is sold by men. Men are reluctant to relinquish money to women and some even discourage women from income-generating activities. However, in better mobilized communities especially by CFMC, there was shared responsibility, less female mistrust and better management. This resulted in better nutritional status and less social disharmony between wife and husband to the benefit of the family, especially the underfive children.

V. INSTITUTIONAL CAPACITY AND ENTRY POINTS FOR COMMUNITY-BASED NUTRITION ACTIVITIES

Important differences in health care delivery were identified in the two Districts, with Iganga having more formal health personnel, and Rukungiri more mobilized in terms of CBHC. Meetings were held with the DHMT to discuss what they might be doing in nutrition, field visits were made with supervisory and operational staff to identify services being carried out, their frequency and quality, and to assess the constraints between planning and implementation.

1- Growth monitoring/promotion (GMP) assessment: these activities are supposed to be part of EPI, CDD and health education activities. However, since former assessments had documented little GMP (Teller and Mudusu, 1989; Teller, 1991); the team decided to go to the very few places where it was actually taking place. The team had opportunities to observe GMP in one setting in Iganga and two in Rukungiri (see forms, annex). In another EPI session in Iganga there was supposed to be growth monitoring, but it was canceled, as the Medical assistant arrived late. In addition, many mothers were waiting, there was no scale nor personnel oriented to do the growth monitoring. The WINS coordinator quickly trained the teacher to weigh the children with the assistance of the mothers, and the CHW plotting and interpreting the trend to the mother. No health education talk preceded the EPI session.

* In the Buluba Mission hospital weighing takes place on Wednesdays during the EPI sessions. The dating and plotting appear to be accurate. The team was not present on a Wednesday to actually

observe the session, but they observed a Friday outpatient clinic day, when only weighing was done (on a defective bathroom footscale for children who could stand up even though the hanging scale was available) with no plotting nor counseling.

* In Kisiizi hospital, a more complete GMP was observed, with the CHW/trainer efficiently weighing the children without much participation of the mothers. The nurse assistant was accurately plotting and providing feedback to the mother. Counseling time averaged less than one minute, which was often not enough time to get an accurate picture of the problems. Moreover, while referral was provided in cases of suspected illness, no systematic followup assistance or home visit referral was observed. In one case, the mother did not have enough money for the antibiotic medicine prescribed by the doctor, and was very reluctant to borrow the money (which is available through hospital policy in cases of economic hardship.)

* At the Bugangari (Rukungiri) health centre, a static EPI clinic was observed from beginning to end. Forty mothers with their infants were first given a health education talk with colorful cards of various MCH themes, including breastfeeding promotion and appropriate weaning foods. With each card, key questions were read off. The mothers were usually able to answer. After some twenty minutes the mother became somewhat restless, as many themes were presented all together, without emphasis on any one. The health officer/CHW-trainer assisted the mothers in weighing their own babies, and in reading the scale. The mothers had to walk over some 30 feet to where the medical assistant was seated filling out the cards, plotting the trend, and giving feedback to the mother on whether the child was growing well or not, and what vaccinations were needed. The combined WINS/DMO/SWIP team followed the sequence and was impressed to observe that the babies were being weighed at each EPI contact, and that mothers were able to read and remember the weight of their children and report it to the medical assistant. They also appeared eager to know whether their children had gained weight or not. Most of the mothers had come from quite far distances in the mountains, and were able to take advantage of the nearby market day in Kasindiro.

GMP was very rarely observed in Iganga (the team went to one of the only functioning clinics), it was more common in Rukungiri. Feedback and counselling were inadequate. Most of the GMP was attached to EPI clinics and thus included only the young infants, leaving the most vulnerable (over 4 months) with little GMP coverage.

In general, it appears that very little GMP is being implemented in either Government static or outreach EPI centres. In the four villages outside the areas of influence of these hospitals, very few cards that had even one weight on them were found. In the Kiwanswa EPI outreach, only 3 of the 43 cards had at least two

weighings on them in order for us to detect a trend. On the positive side, in the two Mission hospitals and the static government EPI clinics observed, both the age calculation and weight plotting were accurately and carefully done. Often, some feedback on the growth trend was explained to the mother.

Even where GM does take place, the wrong children are being weighed and counselled. Most of the children who really need the regular monitoring are finished with their EPI (between 4-9 and over 9 months) or live so far away that they do not attend regularly.

2- CDD Home Visits: Most health inspectorate staff (HI/HA/HO) say that they are supposed to spend half time (12 days) doing home visits. These visits should be targeted to high risk homes and include food and nutrition-related observations and advice on nutritional status (by clinical signs), breastfeeding and weaning foods, a review of growth monitoring card trends and the food storage situation. The guidelines and home visit forms shown to us in Entebbe were not seen in Rukungiri, where only the old stencil for the food/nutrition-related form could be found by the District Health Inspector. It was quite apparent that home visits to nearby homes are untargeted and not as frequent as planned (often limited to one afternoon a week). Only one of the 32 case history mothers responded affirmatively when asked if they had been visited in their homes by the health staff. On several opportunities when the team got to observe actual home visits in both Iganga and Rukungiri (see observation form, annex VII) it appeared that the HAs/HOs made somewhat superficial and quick visits, looking more at the water, sanitation and EPI record, paying little attention to food and nutrition. Only if they realized afterwards that we were really interested in nutrition did they discuss it.

Some of their constraints to more effective home visits are:

- 1) lack of an adequate targeting criteria;
- 2) discomfort in communicating with uneducated women and in being in their homes while the husbands were absent;
- 3) lack of good coordination with the RCs and CHWs whom they see as rather ignorant, and as siding with their own villagers in spite of poor health, hygiene and sanitation conditions and practices;
- 4) lack of growth monitoring points on the child health card or orientation as to how to use the card as an educational tool; and
- 5) lack of sufficient motivation, incentives and transportation to reach the more distant at-risks.

Now that allowances have been limited to 2400 Uganda shillings/month (about \$2) for CDD, and eliminated for EPI, there is a concern about the limited outreach capacity of the HI staff.

In contrast, we accompanied CHWs on their home visits in areas mobilized for CBHC. They appeared to be at greater ease in the

home and to enjoy dialogue, especially with the husbands who were around since the CHWs often visited late in the afternoon or weekend. In Iganga, the CHWs were active during the prolonged drought season and encouraged households to grow and not sell drought resistant crops like cassava and millet. They directed the team to high risk families and to children who had EPI cards. Those who trained trainers and mobilized for CBHC were most motivated and knowledgeable.

Another cadre who appeared to be well accepted in the communities and by the women were the CDAs. They are often CBHC trained and VHC members in Rukungiri, and were more effective nutrition counsellors. Other "native" counsellors are, of course, the grandmothers and mother-in-laws. The case history interviewers/observers were quite impressed by the child care capacity of these women. They were also observed in the food processing, preparation and feeding stages, particularly when the mothers were out in the field.

3- Maternal Nutrition: Community-Based Strategies Linking Health System and Community.

Despite the presence of more formal health personnel and facilities in Iganga District, there was far less community involvement in their own health care and sanitation by the people and far less social mobilization, than in Rukungiri district. The presence of a strong CBHC network, sensitized and mobilized community through village and parish health communities and community health workers, provides a feasible and promising approach for reaching individual households in regard to health, nutrition, sanitation and other problems. The reality observed is limited government resources, the enormity of the health and nutritional problems and the inter-relationship of nutrition, illness, the environment, social, economic and agricultural factors. Thus only an integrated approach on the community level will begin to deal with the problem of chronic malnutrition.

Maternal malnutrition must be dealt with through multiple channels as antenatal clinics alone cannot possibly handle this problem. Key entry points for dealing with the maternal malnutrition include:

- o Focus by the CBHC network through the community health worker (CHW), working on a 10-cell and household level is an excellent position to identify women who are pregnant and could further identify women who are malnourished (arm Circumference, height, obvious anaemia) and provide nutrition education and referral for further treatment and antenatal care.
- o Identification of safe motherhood initiative programmes, and extensive use of pregnancy monitors, should be intensified and

coordinated with the efforts of CHWs. Early identification, counselling, health and nutrition education of pregnant women should be a part of this programme.

o EPI outreach clinic staff who not only immunize pregnant women with tetanus toxoid, but also provide health education sessions for the mothers, should include nutritional education for improving maternal nutrition during pregnancy and lactation and encourage prenatal care.

o Identification of maternal malnutrition through use of arm circumference could become, on a pilot basis, part of growth monitoring on a community basis.

o The traditional sector is an important point of entry. Traditional Birth attendants (TBAs) already give nutritional advice to mothers during pregnancy and lactation and even to some mothers who may be suspected of being anaemic. They also make follow up postpartum and subsequent visits to check on the mothers' and infants' condition. With retraining or further training these influential women can serve as an important resource in improving maternal nutrition.

o Schools can play an important educational role, through nutritional education for "future" mothers, and in detecting malnourished girls and referring them to CHWs for follow-up.

o The informal linkages through women's clubs working with the home economics and community development extension workers and local health communities can serve as linkages from household to health system.

o Antenatal service must be incorporated to a greater extent in outreach services and attention should be paid to the mothers nutrition. The prospect of integrating antenatal activities with growth monitoring might improve the attendance of mothers in the antenatal care as this would reduce the time demands on mothers who are extremely busy.

4- Nutrition education: EPI and Antenatal services provide these opportunities, as well as the home visits. Most of the educational methods are group lessons, with questions and answers. Often, in EPI outreach group lessons may not take place because of the delayed arrival of the outreach team. There are very few nutrition education materials, and one rarely observes them on the walls in the dispensaries. However, the Rukungiri social preparation approach to CBHC does try to tailor health education topics to the expressed needs of the attendees. CBHC was observed to be well mobilized in three sub-countys in Rukungiri, where there were health committees, VHCs, TOTs and CHWs in continuous training. In Iganga, the CBHC experience appears to be limited to Busoga Diocese and to one subcounty, but there were problems with the training

which had to be suspended for a time.

Key Entry Points

The WINS scope of work emphasized the need to assess potential effective linkages between the health sector and the community. Unfortunately, the outreach operational personnel in most government sectors find many constraints to extending services to the scattered rural areas, where the majority of the high risk population lives. The exceptions are the school system and CBHC, where the possibilities for sustainable nutrition-related services are greatest.

Key entry points between the health and social sectors and the community were identified at the RC-3,2 and 1 levels, by the Parish Health Committees and Village Health Committees, and by Womens' groups and VHWs. These links are:

1. Community-based Health Care committees;
2. EPI outreach clinics with followup by community-based growth monitoring/promotion and integrated home visits (CDD,CBD, etc.);
3. Antenatal/family planning clinics to address maternal malnutrition; and
4. Women's clubs/associations/societies with related income-generating activities.
5. Primary schools.
6. Traditional health and food advisors (eg., TBAs).
7. Pregnancy monitors.

To support these community-based activities, the district supervisory and operational level outreach workers (eg., teachers, CDAs, AAOs, home economists, HA/HOs, etc) need to be retrained to provide the technical backstopping for food and nutrition plans of action. Finally the RC structure and traditional healers and TBAs have a major role to play in ensuring that the community's priorities are respected and that households are sufficiently mobilized.

VI. OUTLINING AN INFANT NUTRITION ACTION PLAN AT DISTRICT/COMMUNITY LEVELS

Under the decentralization policy of the GOU and the new Three Year Health Plan of the MOH, strengthening linkages between the health care delivery system and the community is essential, particularly

if sustainable approaches for optimizing infant and young child nutrition are concerned. Each district will now be developing their own health plans for the coming years.

Plans of Action for strengthening nutrition at the district and community levels might encompass, among others:

1. sensitization and mobilization of commitment and resources to nutrition promotion;
2. training of a group of facilitators in practical nutrition activities;
3. workshops in participatory RAP-type methods at operational levels; and re-training of the CBHC level in practical nutrition activities;
4. application and extension of RAP, school height censuses and baseline surveys in all mobilised CBHC parishes, with full participation of the VHCs and RCs, as a basis for food and nutrition surveillance, CV-Health Information Systems and CB-growth monitoring/promotion;
5. selection and assignment of one qualified person to serve as Coordinator of an integrated food and nutrition and breastfeeding support programme, with immediate technical support and training to be provided by national and international level resources;
6. frequent and immediate feedback of the nutrition monitoring, including RAP results to VHCs and RCs, and prioritization at the parish and community levels of food security and nutrition interventions and activities;
7. extension and continuity of MCH/EPI growth promotion activities beyond the 4th month of age, and then beyond the measles age (9th month);
8. inclusion of the above with food-related income-generating activities by promoting clubs/associations/unions and other productive and educational women's and men's groups;
9. Mobilization of minimum adequate resources: allowances, transportation and logistical support for operational levels.

One of the two assessment districts, Rukungiri, emphatically states that it is ready to embark on this Plan of Action in December, 1992.

Mothers' Programme Recommendations

The mothers suggested the following reasons as to why there was

growth faltering among the children:

- only accessible health systems were village shops and expensive private clinics.
- lack of resources for medical care
- long distance to better curative services and
- lack of efficient and effective government health system which prevented them from obtaining quality health care.

They associated the frequent episodes of illness and poor response to low quality treatment and poor health system.

The mothers suggestions on what could have been done to have prevented growth faltering among the children were as follows:

- Encourage the RC system to mobilize communities, especially the men, to appreciate the value of outreach clinic attendance for young children and their mothers.
- Improve the availability of essential drugs at all health units and control/reduce the cost of drugs and medical care at private clinics.
- Have nurses or vaccinators begin immunization sessions on time.

The assessment team feels that, in addition, the following are needed:

- Emphasize general hygiene of water, collecting and storage containers in health education.
- Improve feeding of anorexic children. Educate to be innovative in utilizing available resources to prepare small nutritious local diets and give more frequent feedings.
- Formulate income-generating activities for both men and women. A woman should have self esteem and be able to manage her own resources for her family. This would also address the situation of many jobless men in Rukungiri.

VII. RECOMMENDATIONS FOR FORMULATING A PRACTICAL STRATEGY FOR INTEGRATING NUTRITION INTO MCH AT NATIONAL LEVEL

A. Organizational and Management

1. Strengthen the nutrition component of the MOH's integrated MCH programme by inclusion of explicit objectives and activities, and by provision of adequate technical resources for implementation through PHC outreach. Sensitization and mobilization must be followed by practical planning and a technical and resources commitment to its implementation.
2. Prioritize selected experimental districts which are sensitized and committed as the first areas to strengthen the MOH programme in nutrition. Utilize entry points into the community, as outlined above. The draft plan of action for Rukungiri, where four CBHC-mobilized parishes are first targeted, can be used as a model for other districts, such as Arua, Lira, and Mbarara.
3. Incorporate CBHC strategies into the new MOH integrated approach to training for the MCH programme within PHC. The new Nutrition Division in Entebbe can develop the capacity to form district level teams of facilitators that would train a multisectoral level of supervisory and operational personnel at the County and Sub-county levels. Within the DMO's office, the cadre of personnel that can make the EPI/GMP/CDD links with the community is the Health Inspectorate, particularly the HAs and HOs. The cadre of nursing aides is quite a relatively abundant resource at the health facility level. Key skills needed here include household food insecurity and intra-household resources management assessment and maternal/child nutrition counselling skills, both to be imparted in CDD-related home visits. Learning how to organize GMP sessions at the outreach and community levels is important for planning the targeted followup at the household level. Moreover, better approaches for integrating the operational staff community-level work with the RC structure and CHWs are essential.
4. Donor-supported PHC and CBHC programmes should incorporate maternal and infant nutrition improvement as explicit objectives with concrete plans of action. The major existing area-based programme where this could start immediately is the 1992-95 Plan for SWIP (UNICEF supported). Others on the horizon include the new Family Health Project (USAID-supported), the Second Health Project (World Bank Supported), and various NGO projects.
5. The new USAID-supported Family Health Project could incorporate nutrition objectives and key activities which address reproductive health and family planning. Maternal nutrition monitoring of energy depletion and intrauterine growth retardation is the starting point. GMP should be used as a family planning counseling entry point to promote continued breastfeeding during the weaning

period, and establish a growth (eg., between 10 kilos by 18 months and/or an adequate growth velocity of at least 100 grams/month in the 2nd yr. of life) and development goal (walking alone) to be reached before starting a subsequent pregnancy.

6. Promote and encourage multisectoral approaches. The latest draft of the National Food and Nutrition Policy and Strategy should accelerate its Plan of Action to ensure that all relevant sectors are supporting nutrition activities. Target development programmes which can attack the major factors identified above in causing early growth faltering and maternal malnutrition. These would include, among others, household food insecurity, such as PAPSCA, primary school education, food processing, marketing and storage, and women-in-development programmes.

B. Specific Activities

1. Revitalize and integrate growth monitoring/promotion (GMP) of young children and maternal nutrition monitoring into the MCH programme. Begin stronger nutrition screening and counseling procedures in the antenatal period (which has relatively good coverage) and increase them as part of an expanded EPI through community-based GMP and improved as part of a targeted followup in the home-based CDD programme. It would be insufficient to merely incorporate breastfeeding and weaning promotion and broad-based nutrition education into existing programmes, for other situation-specific factors need to be addressed in the prevention and case management of early growth faltering. (For example, community-based drug kits are being recommended as part of an effort to deal with the illness management component of the growth faltering problem).

2. Prioritize prerequisite actions to improve maternal nutritional status, such as:

- a. Sharing of information and further rapid assessment for maternal nutritional condition with feedback to community and district level for awareness building over sensitization to the problem, e.g., village, parish (RC1-3) health committees, parishes etc, mothers', fathers' clubs.
- b. Training for facilitators, trainers, and all levels and variety of outreach workers, (CHW, CDD, EPI, HA, HO, NA, pregnancy monitors, midwives, traditional midwives, extension workers, in Agricultural Home economics, community development staff, and school teachers) on recognition of maternal nutrition signs, and concrete steps for followup.

3. Address maternal undernutrition and energy depletion as a priority in the health and related sectors. Ensuring sufficient

child spacing (at least two years) is also important. Antenatal screening for undernutrition and anaemia is needed at both facility and community levels. Labor/energy/time-saving approaches with appropriate technology and organization are needed. Income-generating activities must be supported.

4. Extended and intensify applied and operations research, including RAP approaches, to address the numerous remaining questions that this WINS assessment began to address systematically. This is needed to supply accurate, relevant and current information for rational decisionmaking. Capacity-building strategies are called for to assist the Child Health and Development Centre and related Makerere University institutes and departments to further their policy and programme-relevant research efforts.

5. It would be appropriate to capitalize on the "starvation" for accurate, relevant information that has generated much interest in the RAP approach of nutrition assessment, at both central and district levels, and by the Education and Agricultural Ministries. Requests for extension of the RAP to cover the rest of the two districts, as well as to other PHC and CBHC priority districts should be followed up. The same team which was trained to do this WINS assessment, could continue to work, under CHDC and MOH coordination. The RAP school height census and CB-GMP can both serve as the basis for an on-going parish-and sub-county level nutrition surveillance and HIS to further mobilize communities for relevant action.

6. Much more attention is required in order to address the serious problem of seasonal and chronic food insecurity and intra-household acquisition, allocation and management of food and other resources for addressing maternal and child malnutrition. Assessment, research, training and decentralized planning on the underlying conditions and immediate situations that were identified in this assessment must be addressed. These include difficult topics such as husband-wife communication, women's status/role, decisions to sell or store staple food crop post-harvest food losses and storage, and RC support of insecure households, and adequacy of lactation by moderately malnourished women.

7. Strengthening and enrich the current integrated training with nutrition components. Aim at building a multisectoral supervisory and operational team at district level. Key skills needed include intra-household resource management, growth promotion counselling, household food security, and case management of illness-related growth faltering.

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ANNEX I

**Summaries of Focus Groups
and Group Meetings**

RUKUNGIRI DISTRICT
Mothers' Focus Group

WOMEN FOCUS GROUP

There was consensus that a child who is healthy is always happy and cheerful. The child does not fall sick frequently and according to traditional ways of monitoring growth the child achieves the mile stone of development within the expected period or age (for example sitting, crawling, teething). The child feeds well and has good appetite and should be able to eat family adult food by six months of age.

Determinants of Health and Growth Failure

Health Care

- A child who falls sick most of the time can not grow well because he/she does not have good appetite for food. The most common diseases identified to affect child growth are diarrhoea and worms.
- Health care is important in child growth. Most mothers resort to convenient medical care from nearby shops or markets using unqualified members of the community to dispense drugs. Mothers admitted that they always think they know what their children are suffering from and therefore buy what they themselves consider appropriate for treatment.
- Health care is expensive in rural area because the private medical workers are consulted, and unless the family can afford to meet the medical bill, more often than not a child is not taken for treatment. Mothers then resort to traditional medicine which they are able to pay for the services in kind (not cash).
- Government and recognized health centers are often far away from the homes. The cost of transport to these units hinder utilization although these are the units one would be likely to find qualified medical workers.
- Mothers feel that they tend to be harassed at static health units and would prefer to go to mobile clinics if available or to private doctors. Sometimes the services offered take a long time and in the end the health workers inform them that, there is not enough medicine and they have to come back home to find money for medication.
- Family Planning has not effectively been implemented in the region. Mothers feel that they are producing many children,

but their peer group have discouraged them from using the methods because of side effects of drugs.

- Growth monitoring/weighing of their children after completion of immunization is only done when children are taken sick to the health units, and no counselling to the mother is done.

Feeding

A child should benefit from breastfeeding during the first few months of life and supplementary food should be given at any early sign of insufficient breastmilk by the mother.

- A child who is found to be irritable and crying during breastfeeding indicates that he/she cannot get satisfied at the breast and mother is compelled to give other available feeds so that the child settles down and gains weight.
- Mothers have observed conditions when a baby cannot gain weight with breast milk alone, during the early months of age. This has been believed to be an indicator of the poor quality of breastmilk. Supplementation is therefore encouraged.
- Mothers are often anxious about what would happen if they ever fall sick and cannot breastfeed their children. This situation could also arise when the mother is away from the baby and unable to continue breastfeeding. For this reason most mothers start introducing other feeds early in case any of the above conditions arise.
- Feeding well on the family diet promotes child growth. In Rukungiri district there has been prolonged drought and famine and there is scarcity of food. Supplementary foods should be introduced by 4-6 months but if there is nothing suitable the child remains being fed on the breast. Millet porridge is an important first supplementary food since there is very little cow's milk in this part of the district. Lack of food within a household affects the quality and quantity of available weaning foods.
- Mothers believe that a good food mixture of staple beans, peas, greens and milk help a child to grow, if it is available within the household.
- Inadequate number of meals eaten in a day limits food intake for children. The average is two meals a day for all family members.
- Use of bananas and sweet potatoes for children's diet is not encouraged in Rukungiri district. Bananas (Matooke) is believed to contain very little nutritive value, and sweet

potatoes are difficult to digest by young children, an alternative food source would have to be utilized.

- There is poor crop yield of food cultivated because of poor soil. Therefore there is an overall chronic food shortage in Rukungiri district.

Home Care/Child Care

- A child cannot grow well if she/he is not provided with appropriate bedding. A child should be very well covered at night from the cold in order to prevent fever. Sleeping on hard cold floor 'drains' the child's body and he/she cannot put on weight.
- A healthy, clean and hygienic environment protects a child from disease. A child who has not been taught good toilet habits litters the compound and flies and worms are bound to cause disease.
- Mothers admitted that they are fully responsible for the care of their children, but they have very limited time and resources available to achieve the best care for their children. They believe that having enough strength, energy and good health of the mother promotes good child care because of her natural role of looking after family members.
- Backache due to heavy workloads and persistent lower abdominal pain, which most women suffer from, diminishes the effectiveness of rendering the services expected of them.
- Income generation, especially by the woman, helps the family to get resources which the men cannot provide. Many men do not share their income with the women for the benefit of their family members. Women are even sometimes found to be responsible for providing clothing for their husbands.

Household social problems between husband and wives tend to affect the psychological wellbeing, and health of women. Poor social status of women, poor feeding and a heavy work-load make life unbearable for women.

- Women have very little time for rest. They claimed that the only time they can care for their children is at their meal time, at night and when they are in the gardens working. At most, a woman spends 8 hours a day in the field whether or not it is a planting season.

Improving Linkages Between Health Care and Communities

In Rukungiri District there are some well-organized communities where people are aware of Community Based Health Care (CBHC). The

biggest problem faced by people regarding the health care system is the distance (accessibility) to the static health units and hospitals.

- Mothers reported that home visits have been effectively carried out in their communities and the topics covered include;
 - Inspection of child health cards, for immunization coverage.
 - Inspection of safe water and protection of springs,
 - Environmental hygiene and appropriate feeding of children.

They recommended that, this type of programme should continue order to monitor the wellbeing of their children.

- Immunization and antenatal care where possible should continue to be delivered at outreach sites, nearer to the people. Mothers felt they are better handled during such programs than at the static health facilities.
- Growth monitoring with the help of village community workers should be carried out near their homes regularly.
- The Rukungiri CBHC programme is a valuable entry point for growth monitoring because of the already existing awareness of its importance.

IGANGA DISTRICT

Mothers' Focus Group

A child who is healthy is happy, cheerful and does not fall sick frequently. He is kept clean and lives in a hygienic environment free of disease. The child should be wellfed and well covered at night from the cold. The child should be fully immunized and when sick should be taken promptly for medical health care at clinics where there are qualified health workers. The mother is fully responsible for the welfare of the child, but should be assisted and provided with essential resources that will help her in caring for all family members. Although mothers are faced with heavy workloads while providing for their families, they think this role cannot change, but their situation would improve greatly if the men (husbands) gave them social, financial and psychological support and status. A child who is miserable and does not respond actively to the environment nor plays actively compared to others is considered to be undergoing poor growth and development.

Determinants of Health/Growth Failure

Health

Immunization against diseases such as measles whooping cough and tuberculosis protect the child, and a child who is not fully immunized lacks protection and eventually fails to grow when he/she gets the disease.

Children fall sick very frequently and the general practice by mothers is to use shops for the supply of a few drugs without diagnosis of any particular illness the child may be suffering from.

- Poor appetite during illness is associated with limited food intake by children.

Most times these children do not improve and traditional medicine is used.

- Health care is expensive and most mothers use private clinics within their villages for medical care. If a mother has no money to take the child to hospital she will just leave the child without treatment.

- Lack of general hygiene and clean environment expose children to disease, particularly worms.

- Poor sleeping and bedding provisions by the family expose the children to cold and discomfort and this is believed to be a

hinderance to proper growth. This is a specific sign of poverty.

Feeding

- Insufficient breastmilk production prompts mothers to supplement before 4 months. This was observed when the mothers found their children getting irritable and could not be satisfied on breast milk alone.

- Mothers often know that a good diet is essential for proper growth of the infant, but they have to do with whatever is available in terms of diluted cow's milk, maize porridge and family food.

- A family diet consisting of cassava and/or rice is believed to be unsuitable for young children because of the high starch content which causes constipation. Some of the foods considered essential for child growth are fish, soybean, maize flour, milk and pawpaw, bean soup; some of which have to be bought if money is available.

Therefore lack of a suitable family diet for young children limits the quality and provision of a nutritious diet.

- Inappropriate knowledge and innovation on the mothers part as to how to use available food for children is a problem.

Home and Child Care

Preferential treatment by a polygamous husband for some mothers and their children prevents the other women from managing the welfare of their children especially in polygamous families.

Most of the money husbands (men) generate is spent on drinking, and on marrying other wives, the women claimed.

Men do not trust their women outside their homes and discourage them from joining women's clubs where the women think they can learn and gain in health education and income generating activities.

Mothers' poor social status and poor treatment by men within the home brings anxiety and worry, and although she may have all provisions necessary for wealth, her nutrition status and health cannot be optimal. She tends to lack confidence in what ever she does.

Poverty in the home, where the women is unable to get to resources that improve the health of the child in terms of better food, better medical care, etc., make the women negligent a lot. A mother who has become pregnant while the child is still young is forced to stop breastfeeding and sends child to a grand mother or

other relatives with a belief that pregnancy affects the child growth, affects appetite and the child develops certain illnesses which can only be rectified by traditional healers. Mothers admitted that when they become pregnant they tend to neglect these children if they fail have to get some where to send them.

Men do widely believe that child care is merely a women's affair. Their role is only to provide resources if they have the money.

Women know that despite the great workload they do not expect assistance or help from other people, except, may be, from their older children. The majority suffer from persistent lower abdominal pain and backache, they have to try and do what they can.

Women in Iganga do not realize or consider the burden of their workload because they consider it as a natural responsibility.

Improving Linkages Between Health Care and Communities

Women do associate good child growth with improved health and hygienic environment.

- Home visiting by health workers outside their villages was suggested because they believed that these are more respected and their messages are taken more seriously.
- Growth monitoring or weighing of children is mainly done at Iganga Hospital. This method was appreciated as a means of monitoring what is happening to their children in terms of growth and they believe this would sensitize them in getting concerned and giving appropriate intervention, i.e., feeding the children more.
- The women highly recommended the use of the RC system to sensitize the men in order to allow mothers to get out of their homes to attend outreach units, women's clubs and income generating activities.
- Mothers preferred having weighing scales for monitoring the growth of their children within their village. They wanted one of the mothers to be trained to carry out growth monitoring.

periods when food may be relatively scarce, household food security would be okay if;

- Selling food was checked or
- some of the accruing cash would be utilized in purchase of some quality foods and more
- of the money was put in the hands of the wives/women for home use.

Food security was not mentioned as a major constraint in Iganga, it was noted in Rukungiri.

2. Poverty or Lack of Cash

For other services and in the absence of marketable cash crops, food crops have been turned in cash crops at least partially. All foods are marketed though some like beans, groundnuts and millet will only be sold (with pain) when things cannot be otherwise.

The effect of food selling is worsened by the fact that the husband quite often decides the type and quantity of foods to be sold and that he retains the money as the main spender with minimum consultation with the wife.

3. Lack of Awareness/Ignorance

Inadequate knowledge about nutritional values and nutritional adequacies of various available foods; inadequate skills in the preparation and frequency of child feeding were mentioned as major influencing factors of the nutritional status.

HA did not themselves appear to be quite confident in food and nutrition knowledge and skills.

4. Child Care

The care of the child was consistently put in the hands of the mothers as the direct caretakers. The father's role was apparently of remote control and taken as an assistance to the mother and only supportive.

Fathers provide materials, e.g., foods which are not available in the household and money for other needs like health and clothing. The Health Assistants are concerned with the too much work the mothers have to accomplish in the home. They stated that mothers therefore have very little time allocated to quality care of children. There are advisors on child care including grandparents and other adult relatives.

5. Health Status

A few diseases were mentioned as the common ones in their communities both in Iganga and Rukungiri, diarrhoea, malaria and other fevers, and worms were common. AIDS was mainly among adults.

Diseases mainly from poor hygiene were strongly associated with poor nutritional status.

It is notably so partly because Health Assistants are basically controllers of hygienic practices (water and sanitation). In fact in Rukungiri they are nicknamed as 'nyanga oburofwa' meaning 'I hate dirt'. Even their (HA) basic training majors in environmental sanitation.

6. Social Services

Community based services are yet limited and unappreciated by the public. It was noted that very few people actually demand services. Health Assistants are not usually consulted except on water protection and repairs of boreholes.

Therapeutic services were said to be limited by short supply of drugs and other supplies and demoralised staff.

Health Assistants associated poor health facility services to poor nutritional status.

Conclusions

1. Food security, generally, was not one of the major factors contributing to poor nutritional status of children in Iganga.
2. Ignorance/lack of awareness was recognised as one of the leading cause of malnutrition among children.
3. The concept of child care is yet lacking in HA though they (HA) realise that mothers are overburdened by too much and hard household/work.
4. While HA realise that health status affects nutritional status, their understanding of poor health is too limited to hygienic-related diseases.
5. Poverty/lack of cash have induced families to sell valuable foods.

Activities by Health Assistants

The major function was stated as Health Education.

Health Assistants are highly trained to take care of water and sanitation to promote good hygiene and hygienic practices. Hence they;

- supervise the protection of springs,
- advise on the construction and utilisation of excreta and other waste pits (e.g. pit latrines),
- advise on proper housing.

Nutrition education was also stated by them after more probing.

These activities are said to be done

- in groups of members of the community especially in women's forums and meetings organised by administrators.
- in homes as a home-visiting exercise. Home visiting is usually done in accompaniment of a chief or an RC1. This may indicate lack of confidence from mothers or show the enforcement connotation of Health Assistants.

Growth Monitoring and Promotion

The weighing of children is mainly done at immunization sessions.

Health Assistants say their major role is to mobilise mothers/parents to attend.

It is not their duty to weigh children at these sessions. They are capable of doing so and they do it when there is nobody else to do it.

They however realise the importance of weighing as a tool to targeting home visiting and source of information to facilitate nutrition counselling.

Collaboration

Health Assistants said that they collaborate with community development assistants only in water activities ran by SWIP and RUWASA. No forum was mentioned where Health Assistants share health information with other extension staff in the communities in which they function.

In Iganga, Health Assistants do not enjoy good working relationship with RCs and CHW. The Rukungiri Health Assistants, however, are so far working with RCs and CHD.

Conclusions

1. Health Assistants are mainly health educators and are therefore potentially well positioned nutrition educators.

2. Hygienic practices should be capitalised on in promotion of quality feeding.
3. Growth monitoring and nutrition education is not practised by Health Assistants as they do not regard it as one of their schedules.
4. Health Assistants do not appropriately collaborate with other EPI staff and hence do not use the abundant information generated from weighing at immunization sessions.
5. Home visiting is limited and poorly targeted.
6. Health Assistants do not collaborate with other social services (extension workers) in the field of nutrition.
7. The good relationship between Health Assistants and RCs and CHW in Rukungiri is a good gesture.

Constraints

Constraints were very similar in both districts.

They included:

- Transport
- Allowances
- Logistics like protective wear, weighing scales, stationary
- They all lamented about their poverty.

Conclusions

Health Assistants are very demoralised without necessary logistics. This hampers their work output and efficiency.

They are not enterprising. None of them had any suggestion toward income generating development ideas even for themselves.

MEN'S FOCUS GROUP

Rukungiri

Nutritional Status

Nutritional status was highly associated with good feeding. Various foods were mentioned. Men say that the nutritional status of children can best be determined by the women.

Household Food Security (HHFS)

Men took it as their responsibility to assure that there is enough food in the houses. HHFS was mentioned as the major item that make a man proud of his manhood in the home.

However, they said that the job of cultivating food is for woman. Men say that they are planners and not producers.

However where there is need to purchase any food or any other household item it is the duty and responsibility of the man. The decision to spend the money on food items is by the man. Men alleged that when women are given money, they do not spend it on any household item even salt and soaps.

When pinned down as to how this money goes, they said that some may be given to children going to school.

There was consensus that income expenditure should be done by men and not women.

Generally men seem to mistrust their women. They also fear the power of women, especially cash power.

They have no clear idea of what women do with the money. They only suspect that she keeps it as her money.

Child Care

Child care was categorically stated as a womens' job. She is meant to feed, bathe, clothe and keep the childs' security. When sick or going to a health facility men could not define any particular role. They only said that if they engaged themselves in such activities, the women will despise them. Men believe that it is their duty to ensure that children are well catered, through their supervisory role (and not an active role).

They however realised that women have too much work to do. They however feel that all work is not worth to be done by them. If the wife happens to get sick, in bed, they call upon the assistance of neighbours or relatives. One says there are always alternatives

but not for him to do.

Financial Management

Man is financial generator, controller and spender. Men fear that if women get money, they will become bossy. They do believe that women cannot buy household items.

That even if she were given the money for home use, she will just waste it in a very short time (they are poor money managers). Men had consensus that women should not own money.

Service Utilization

Common illnesses were mentioned as fevers and meningitis.

Most of them believed in curative treatment; preventive health services are not regular. Other social services are more rare. Home visits by Health Assistants are not frequent. Health Assistants are taken as inspectors (abalambuzi). Most people shall consult only the health facility for therapy.

Recommendations

1. Services to be nearer to the people.
2. Child care issues are to be impressed to men.
3. Men's attitudes about the women's shares need a lot of teaching (education, especially by village meetings).
4. Other social extension workers need to collaborate or be made to collaborate in nutrition activities.

MENS' S FOCUS GROUP 19/9/1992.

Iganga

Nutrition Status

Nutrition was associated with good feeding and eating good food i.e, body building foods like beans, greens, fish etc. Good nutrition was also associated with a happy healthy family.

Good health and good nutrition was measured by happy children in the home. The mothers can tell better if the child grows well or healthy because she is always with the child. Well nourished adults are recognized by their behavior.

The condition of shortness is not watched - It will need a lot of explanation- dangers of the process and result.

Household Food Security

Availability of adequate food in the home was a responsibility of the father (by buying or cultivating). The man must ensure that enough food is cultivated and enough for consumption is left after selling. He decides how much to sell in consultation with the women. The expenditure of the money is however decided by the man. Men feel secure when there is adequate food for their families. "This shows the concern of fathers on HHFS which is however threatened by the need to sell food crops for money to accomplish other needs of the family. Women's participation is taken as an assistance to the men. Purchase of food where necessary is job of a man.

Conclusion

- HHFS is man's responsibility with the implication that he will be the controller of the granary. He will also command the quantity to sell.

Suggestion: Since cultivation is by the two members (fathers and mothers) more say should be offered to the woman.

The areas for sellable foods should be cultivated differently from the foods regarded as not for sale.

Child Care

Child care generally is a responsibility of the women. Cooking for and feeding children was said to be done best by the woman. Even when there is separation before child is 7 years, the fathers would prefer leaving the child with the mothers. Fathers said that a home is a home when the main manager of it i.e the mother is available.

Feeding, bathing, clothing, and other general care of child and taking children to the hospital is best done by the mother. The father's role was seen as that of providing necessary materials i.e foods, clothes.

The men realized that women had a lot of work to do. But wives would not allow them to easily help them in some works as they would be suspicious of the man's motives.

There was no mention about the role of siblings. The role of grand parents was under-rated as they (grandparents) no longer want to be bothered by young kids. It is the responsibility of their parents.

Resource Allocation and Acquisition

It was clear that men take it as their job to acquire money. They are to sell the produce and any other goods. This money is meant for the good of the family. Women are free to have their own money particularly from produce. However this is taken as woman's money. the father should not press her for its use in the household because it is not her duty to maintain the home. She however is free to buy some household things to the benefit of the family. i.e if women's income is enhanced, this could benefit the family. Expenditure of money in the home is decided and performed by the father. He is the minister of finance in the household. However, the expenditure is also influenced by the women as she is the one to provide the list of what should be bought. There was no consensus about women going to business to make money though the majority were in favour.

Social Services Utilization

Only health workers were active in the community. Normally, health workers do not go to individual homes. They enter the community on appointment. The RCs are informed in advance and the women are gathered to discuss health matters. Men are not involved. Mobilization has also helped that men believe that health workers come for proper purpose.

- People do not consult health workers unless they are sick.
- Health workers are perceived as useful.
- Other extension workers are seen very irregularly (once in 3 to 6 months)

Social clubs and societies are regarded as good because there is learning.

Conclusions:

1. Health service is popular because it is more active. Other services are not seen (once in 6 months)

Recommendation: Nutrition activities should seek to involve agriculture, community development, leaders and others.

2. Social clubs are recognized as resource meetings. They should be encouraged. The community centres need to be revitalized and community development assistants need to be involved.
3. Home visits are not common - meetings are in gatherings. Since nutrition is a family business, home visits should be encouraged and strengthened.
4. Child Care

This is taken by consensus as a women's job because she knows her child best and is the best person even biologically. Men however, realize that because of too much work that women have to do, they are tired. Men can be encouraged to help in water and firewood collection and cleaning of the home.

Women should be encouraged to allow their husbands to participate in household services without suspicion.

5. Resources

Men are the financial controllers. They should however gradually make the women the purchasing officers because they know best what is required at home. Men should be encouraged to leave more money with their wives for proper purchase of household needs.

Women should be encouraged to spend some of their money (e.g from their produce) on household needs for the nutritional benefit of the children and family as whole. Women should be given the opportunity to generate money, may be in the home depending on the family situation initially.

GROUP DISCUSSIONS:

Iganga and Rukungiri

Nutrition Status

Both districts identified malnutrition as one of the social problems in addition to others like fevers (especially malaria), diarrhoeal diseases and lack of adequate water and sanitation practices. The malnutrition is the visible one referring to kwashiorkor or marasmus type. Both districts however identified areas within their districts which are most affected. Coincidentally there are areas in their north parts of their districts.

In both districts common factors included:

1. Poverty there was general lack of monies to satisfy family needs, including purchase of nonfarm foods. This prompted the selling of most foods even in areas where production was little.
2. Intrahousehold decision-making. Selling of foods (especially the most nutritious) was aggravated by the intrahousehold control of resources especially the money. In both districts money was acquired and spent by the men. In Rukungiri it was stated that foods are unfortunately not among the first priorities of the man (money-spender and keeper). The decision of where and sometimes when to take the child for health care is mostly the responsibility of the man. Women who know the details of the home needs do not have enough resources at their disposal, neither are they respected as members capable of making right decisions in the home.
3. Child care:
Women were said to undertake almost 95% of the household workload. They are close to the children and are always at home. Men in Iganga were more participatory where men cultivate together with their wives, while in Rukungiri, cultivation (food production) is a womens job. In both districts, the sale of food and control of the cash therefore is purely a male business. In both districts men seem to have home-phobia. Women were thus said to have too much to do hence little time for childcare.

Health Status

There was identified to be a number of diseases especially due to poor sanitation practices.

Ignorance or Lack of Knowledge or Skills

Parents, especially mothers, did not know how to handle feeding of children.

Activities

In both districts, each department performs different activities in the line of nutrition, independent of the other. There is no integrated plan of action in both districts. Agriculture and the veterinary are struggling to protect HHFS, while health and community development are busy trying to cure and prevent diseases through provision of water and proper sanitation. The CDO in Iganga stressed the importance of education in the fight against malnutrition.

Constraints

- Problems of mobility
- Operational funds like allowances

Conclusions

- The heads of departments at the district levels are not fully aware of the scope, type and magnitude of the nutritional problems.
- They have uncoordinated fair district activities in food and nutrition.
- Their operations are limited by lack of integration/complementarity and inadequate operational funds.
- They are aware of some of the determinants of nutrition issues in their districts.

FOCUS GROUP DISCUSSIONS

CHC Workers and Community Based Health Care Committees

Iganga and Rukungiri

Initiation of Community Health Activities

In both districts, community based activities were sparked off by prevalence of diseases including diarrhoea, worms, fevers and coughs. These diseases were associated with the then prevailing inadequate safe water.

Malnutrition in Iganga at the time of the study, was said to affect about a third of children under five years. Among the community health workers nutritional status was equated to malnutrition.

Stunting was not easily conceived as an indicator for poor nutritional status as it was taken as a genetic process. Community workers recognised nutritional status by observation. Hence they could only catch the obvious ones like Kwashiorkor and marasmus.

Household Food Security

In both districts, these workers said that drought had occurred but was realised longer in Rukungiri district. Most of the food stores were found empty. A number of families were having only one to two meals per day. The workers had advised farmers to plant the non-sellable and drought resistant foods.

In both districts, cash crops were not very available to provide the needed cash for other non farm needs.

Most of the people depended on the sale of their labour to earn an income except in some areas where cattle were many.

Due to lack of cash, food was being sold. In Iganga the only most available foods, maize, was on sale every where while in Rukungiri even the little they had harvested (beans, maize and moatooke) was on sale. It was said that milk is mainly for sale as opposed to earlier days when it was for home consumption.

Even in well mobilized communities in Rukungiri, women were regarded as the food cultivators.

However in Iganga men were more participatory in cultivation while in well mobilised CBHC communities, the sale of foods and expenditure of the money were done by both the men and women.

Child Care

Child care is purely in the hands of women. Women do not even mention the time factor in child care nor any fatigue. Women take it as their responsibility and do not need to ask for any assistance especially from men.

Men, however, were said to assist by purchase of some foods and pay for clothes and health services. They (men) are regarded as home administrators.

Division of Labour

Women did 95% of the household work. Men said that they do the hardest jobs in the home, e.g., building houses and caring for matooke plantations. Most of decisions are to be made by men. Liberalisation was only noted in the well mobilised CBHC communities in Rukungiri.

Child Feeding

There was agreement that mothers were not aware of proper feeding practices and good nutritious meals. Many gave children one to two meals like the adults.

A few described what they had been taught at the women's clubs, but the practice of it was refuted by some mothers and fathers.

Breastfeeding was regarded as natural phenomenon. Babies are breastfed up to 2 years. Introduction of other foods started around the third and fourth months while solid foods were initiated at around six months.

Frequent pregnancies were noted to interfere with proper breastfeeding. Some fathers and mothers were worried about the big number of children due to frequent deliveries as their care was not easy.

Social Problems and Clubs

In both districts social conflicts were noted between women and men, though at lesser degree in Rukungiri where CBHC were established.

It was said that because of education, especially through CBHC and social clubs like women's clubs and adult education clubs, very few cases were appearing before the RC courts.

Household resource management had improved in favour of better feeding behaviours.

Social clubs were actually regarded as useful fora for education and were encouraged. They were mainly for income generating activities.

Activities

CHW or CBHC workers were originally mainly trained to care for sanitation. When asked their main role, they do

- home visiting where their main function was health education, especially about hygiene. There was little in nutritional education.
- mobilize community for other activities, like immunization and water source protection.
- growth monitoring - village health workers do not weigh the children. In Iganga they said they rarely attend the EPI clinics neither do they have weighing scales for their home visiting follow ups. Some of them especially in Rukungiri admitted that they do not know how to weigh. During their teaching, however, they became aware of the use of growth monitoring and promotion.
- income generating activities were observed in one of the CBHC group in Rukungiri.

One of the CBHC group in Rukungiri had a plan of improving the welfare of the women folk by initiating more income generating activities.

Another one did not have any explicit plan of action.

In Iganga the CHW were planning to consolidate their activities by exchange visiting and group action in each area/cells.

Constraints

Operational funds were inadequate and hard coming. Weighing scales and inadequate training were a problem.

Some of them were being challenged as to what qualification they had to carry out their work. This was regarded as unfounded since they were chosen by the community for the training.

Transport to enable them cover the area was not available.

Remuneration from communities was not forthcoming.

ANNEX II

Procedures and Coding Sheet for In-depth Case Study

PROCEDURE FOR THE CASE HISTORY

Selecting the Household

1. Must have a child between 4-15 months
2. Child must have a child health care with at least 2 weights recorded or plotted (3rd or another weight can be taken during visit).
 - the card should have a birth-weight and at least one other weights-below 6 months of age.
3. The household must be in a rural setting-

In any community take at least 2 households with each of the following growth patterns;

- a - a good growth pattern
- b - a fluctuating growth pattern
- c - a poor - faltering growth pattern

Checklist for Case History:

Before proceeding, check whether mother or principal caretaker is at home.

- Observe
- environment; sanitation, layout, etc.
 - house quality
 - food crops, fruits, domestic animals, vegetables, etc.

Information Sought

Composition of the household - sex, age, relationship to head of head of household, employment of adult members, etc.

Mother's and Child's Health Status

1. Check information on CHC.
2. Cross check by asking - birth date, birth weight, type of birth, birth order.
3. Where was the child born?, at home or in a health facility?
4. Abnormalities at birth - congenital or otherwise?
5. Mother's gravid history - illnesses during pregnancy.
6. Discuss child condition or circumstances as per CHC. Refer to any changes upward or downwards.

7. Child's illnesses past or present?

At end of interview - do weight, height of child and mother's arm circumference and height.

DIET/FEEDING

Breastfeeding History

When started?, any special problem?, is baby breastfeeding now, day and night?

Weaning - type of food. Is water given separately? Boiled? How many is baby fed a day/night?

What is being given now? Detailed description of the foods given.

What was given previous day?

How much? (cup, spoon, plate)

Who gives the food? (same person always?)

How long does it take to feed the child? (short time, long time? Why?)

Is the recipe(s) specially for the child?

Is food given from family pot?

Is the same food given always?

Is it given occasionally?

Is the food used bought, is it grown at home?

What is bought?

What is from the home garden?

What type of salt is used, iodised or not?

What type of fuel is used?

What cooking methods are used?

Any special household technologies used?

Cultural Beliefs:

- Are there special food for children at certain ages? What foods?

- Are there any food s prohibited or recommended during certain illnesses, during pregnancy lactation or either for boys alone or for girls alone?

- What is the mother's perception of a child?

- Who is healthy? Who is not growing well? Who is malnourished?

Child Care

- Who looks after the child when mother is away? Does mother have employment outside the home?

- How does the mother allocate the time in 24 hours? Recall her previous day's activities?

- Is this usual pattern? Does the pattern vary on individual days?

MOTHER'S SOURCE OF INFORMATION:

- Who or which extension worker has been to the household in the past months?
- Has mother received any Nutrition education, formal or informal from? From whom and where?

If she has school children- do these ever bring home information they have learned at school concerning nutrition or health - has mother acted according to this information?

Who has helped her most with the health of her child? (Field workers). Did the program make any difference (e.g., CDD? EPI?).

Household Food Security

The food available or grown in the home, is for what use; e.g.,

- for eating
- for sale

Who decides what is to be sold;

- for brewing
- saved for seeds

which food?

If food is sold how is the money used? Who has a say?

- Is there food in the store/garden at time of visit?
 - Which foods?
 - How much?

Other Information

Take child's weight

What could the informant have to prevent the valleys in the graph of the child? (Static or losing).

Good Pattern:

How do you manage to maintain the weight of the child going up?

SECTION - 3:

HOUSEHOLD ROSTER AND CHARACTERISTICS (All Persons)

ID No.	Name	Sex	Age	Relationship	Marital Stat.	Highest Educa. Level Attained	Usual Activity Status (Y-generating)	(All Persons)			Clinical Signs - Pallor - Edema - Kwashi - Current Illnesses
								Arm Circumf. (moths)	WEIGHT Kgr.	NUT. STATUS Above-Below 3rd	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
#	Mother of Todor Ch Children under 5-Todor										
	"										
	"										
	HEAD OF HOUSEHOLD (Father of Todor Ch)										
"	MOTHER (Todor Ch) Children 5-End of Ch.										
	"										
	"										
	HEAD OF HOUSEHOLD (Father of Todor Ch)										
"	MOTHER (Todor Ch) Children 5-End of Ch.										
	"										
	"										
	HEAD OF HOUSEHOLD (Father of Todor Ch)										

Draft 22/sept./92 WINS Maternal/Infant Nutrition Assessment

CODING/PRELIMINARY ANALYSIS FORMS, CASE CONTROL HISTORIES

District _____ Sub-County _____ Village _____ #Household _____ Date _____
Investigator _____

Sum
Code

ANTHRO. Growth Pattern: pos__ neg__ recup.__ unknown__
(index
child) Birth Weight: kgs. _____

Age__yrs Sex _M _F

Present Wt.____; Nut.St-above__ below__3rd P.

Current: Fever__ diarrhea __ ARI__ measles__ other__

Others: Pallor__ Edema__; Kwash__; other_____.

Maternal Age: ____yrs (known__ estimated__)
Charact.

Nut.Status now: ____ (AC in cm)

Anemia: pallor of eyelid ____

Pregnancy weights _____kgs; complications _____

Lactating now__ pregnant now__

Completed edu. level/literate __yrs (if none,
literate __)

Marital Status/situation _____

Migratory status (Permanent, temporary, length of
residence) _____

Religion_____

Relationship to index child_____

Income generating (in cash & cash) activities (type,
time, use) _____

Others: _____

Household Wealth (acres/use/ownership of land/ type/
no.of animals) _____

Charact. Crops/gardens grown on own farm/garden _____

Working (remunerated) adults ____ (no.)

Food security: all year ___ or seasonal ___

Food availability now: types _____
amount stored _____

Housing quality: permanent ___ impermanent ___
wall _____ roof _____ floor _____

Water source _____; time spent daily ___ min.; amount ___

Latrine: available ___; observed that it is used ___

Others: _____

Practice Breastfeeding: (self-assess and observ.)
Affects Quality _____ Quantity _____
Infant

Growth Supplemental feeding: when introduced ___ mo.
Pattern What _____ Why _____

Persons preparing/feeding the supple. food: Who ___

Child care-(when mother is absent): Who ___ Freq ___

Past major illness/hospitalizations- When _____
What _____

Housing compound- level cleanliness observed:
prepared food _____ water storage _____; infant
dishes _____; fecal matter: other _____

Personal Hygiene mother/infant- level observed:
hands _____ face _____ clothes _____

Other practices: _____

RANK
H/M/L

Social 1. Overall HH resources available for basic minimum needs (food, clothing, shelter, med. care):

Situation

(Relative 2. Mother's sufficient time available and
Rank) responsibility) sharing for child growth
promotion/crisis case management:

3. Food preparation/weaning food/feeding situation:

4. Woman's social status within HH/control over resources:

5. Husband/wife communication/decisionmaking:

6. Maternal competence/confidence in- infant
growth promotion /mgt. growth faltering:

7. Other unusual situations/conditions: _____

Final A. Main conditions/behaviors supporting
Analysis good growth pattern:

1-

2-

3-

4-

B. Key situations determining poor
growth periods (valleys):

1-

2-

3-

C. Key situations determining recuperative growth periods:

- 1-
- 2-
- 3-

D. (If B &/or C) (In the parents/investigator's opinion) What could have been done to prevent poor growth by the:

1-Household _____

2-Community _____

3-Health sectors _____

4-Other sectors, other factors _____

SUMMARY ANALYSIS/"GUT" EVALUATION: _____

SECTION - 3:

HOUSEHOLD ROSTER AND CHARACTERISTICS (All Persons)

ID No.	Name	Sex	Age	Relation ship	Mar- tal Stat.	Highest Educa. Level Attained	Usual Activity Status (Y-generating)	WEIGHT		NUT. STATUS	Clinical Signs: - Pallor - Edema - Kwashi - Current Illnesses
								Arm Circumf. (moths)	Kgr.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Above-Below 3 _{rd}	(12)
#	MOTHER of Tider Ch										
	Children under 5-Tider										
	"										
	"										
	HEAD of household										
	(FATHER of Tider Ch)										
#	MOTHER of Tider Ch										
	Children 5- Tider Ch										
	"										
	"										
	HEAD of household										
	(FATHER of Tider Ch)										
#	MOTHER of Tider Ch										
	Children 5- Tider Ch										
	"										
	"										
	HEAD of household										
	(FATHER of Tider Ch)										

ANNEX III

Examples of Growth Patterns

Name: BUEANGAZI, RUK.

Birth weight: EPI/MCH CLINIC kg

REASONS FOR SPECIAL CARE

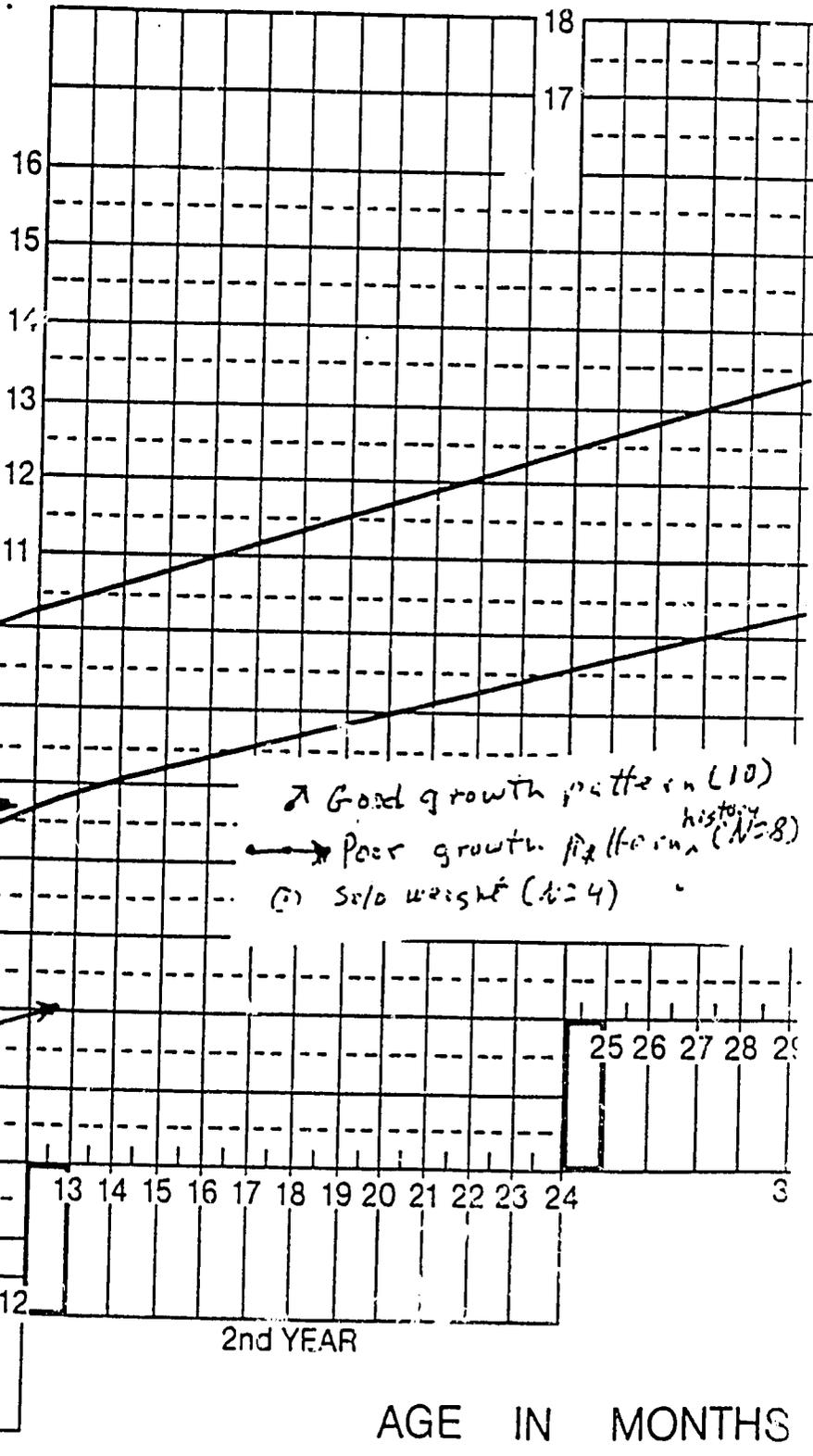
Birthweight less than 2.5 kg <input type="checkbox"/>	Birth less than 2 years after last birth <input type="checkbox"/>	Fifth child or more <input type="checkbox"/>
Brothers or sisters undernourished <input type="checkbox"/>	Twins <input type="checkbox"/>	3 or more children in family died <input type="checkbox"/>

Watch the direction of the line showing the child's health.

GOOD
Means the child is growing well

DANGER
Find out why? and advise

VERY DANGEROUS
May be ill needs extra care



WRITE THE MONTH OF BIRTH IN THE HEAVILY MARKED BOX

ANNEX IV

Relevant Uganda Nutrition Literature Review

LITERATURE REVIEW

Determinants of Chronic Malnutrition as Experienced in Children under 5 years old in Uganda. The presence of chronic malnutrition in Uganda as expressed by stunting has been documented by a number of studies in diverse areas of Uganda, mainly rural, since the 1980's. These were made available for review and are summarized below.

Mbale: A study in 1981-1982, in an area contiguous to and surrounding Mbale within a 10 km radius, revealed the presence of significant stunting (Bogan and Wangwe, 1982) in almost 30% of children and started in the first year of life. Children aged 6 months to 5 years were studied from 1100 households with a mean of 2 children studied per household; total 2,208 studied.

Mbarare District: A baseline survey carried out by The Southwest Irrigation Project (SWIP) revealed stunting to be present in all groups from 0-5 years. Stunting was found to be already present in children under a year and increased steadily in each ensuing year until age 5 year.

There has been a lack of reliable data available between 1971 and 1981 because of the disruption of security, social and other services during the political unrest under Amin. Prior to 1971 Kwashiorkor was reported frequently and since the early 1960's protein-energy-malnutrition (PEM) was reported in about 25-30% of children under 5 with only one or less percent with severe PEM. Between 1970 and 1980, because of population displacement and drought, severe PEM was reported in up to 6% of children in the North. In Karamoja and southwest Uganda, the site of refugee holding areas, severe PEM was as high as 16% of children studied.

Working in West Nile, Hubbard in 1985 showed severe forms of acute malnutrition with weight-for-length under 70% of median to be under 1% and moderate PEM (weight for length 70-80%) to be about 5%. However chronic malnutrition was found in 30% of preschoolers and was seen as early as the second half of the first year of life.

The Uganda Demographic and Health Survey (UDHS) of 1988 and 1989 covered 24 of 31 districts in Uganda and showed PEM to be a significant public health problem. Overall 45% of children under 3 years of age were stunted ≥ -2 SD below median height-for-age (NCHS reference). Also, prevalence of moderate and severe chronic malnutrition showed urban-rural differences. Kampala had rates of 22% of children with moderate and severe stunting while rural areas showed stunting to be present in up to 46%. Other areas of widespread stunting were seen in the central region with 35% and in the southwestern region with stunting in up to 54% of children. The stunting was found to occur as early as 4 months of age and than increased rapidly in the first year, peaking in the 2nd year

and then stabilizing at about 50% of children with no improvement up to age 5 years.

In terms of underweight, (weight-for-age \leq - 2 SD) was found to be 23% in rural areas and 12.7% in Kampala, in central Uganda 21% and in West Nile in Arua, 38% of children were found to be underweight-for-age.

Kampala: A study was carried out of peri-urban and urban children by Kakitahi and Zimbe, 1990. The report showed that there was progressively increasing stunting from year one to year three with levelling off around year four in 23% of children. Acute wasting was seen in about 10% of children and this was particularly prominent seasonally, i.e. during March to June and during September to November prior to the harvests.

Kyeyi: In Tororo district a study was carried out in 1990 around the Kyeyi rural teaching health center by Sserunjogi et al and fourth year Makerere U. medical students. They studied children from 0-5 years in terms of prevalence of PEM and found that there was early onset of stunting in the first year of life. They found stunting to be present in 45% of the children 0-5 years, undernutrition or low weight-for-age in 18% and based on arm circumference \leq 13 cm. PEM in 14% of children. Only 1% were found to have arm circumference measurements below 12.5 cm and 0.5% were found to be wasted based on weight for height being \leq -2 standard deviations. Again in terms of female vs. male differences, the males showed a lower rate of stunting--females showed 52% stunted vs. 48% in the males. The degree of undernutrition was similar 48.6% males 51.4% in females. This is the reverse of the findings of the DHS.

Possible determinants of the stunting were thought to be the impact of high prevalence of malaria, diarrhea, acute respiratory infection and fibril illness including measles which adversely affect intake and nutritional reserves. 70% of the stunted children were found to have had an illness in the previous 2 weeks. Stunting was more prevalent in households which brewed alcohol from home grain stores, 41% versus 24%. Also spleen rates were higher in children that were stunted vs. those not stunted.

Kamuli District: A survey in Kamuli district, primarily for eye disease and vitamin A deficiency was carried out in 1991 and also furnished data on stunting. The survey was carried out in 59 villages and included 5,074 children aged 0-71 months. Vitamin A deficiency was identified in about 2.7% of the children based on the presence of night blindness, Bitot spots, corneal xerosis, keratomalacia and corneal scars.

A 20% random subsample of cases and controls had weight, arm circumference and height measurements taken. The prevalence of stunting was the same in all groups despite their Vitamin A status

and males showed more stunting than females as seen in the DHS survey.

	<u>Subsample</u>	<u>Cases</u>	<u>Control</u>
	Nos. 1,071	112	112
Underweight	21%	15%	23%
Stunting	36%	35%	36%
Low weight-for-height	35%	6.8%	1.3%

Anemia: Anemia was found to be widespread among young children of reproductive age may be due to parasites and/or iron deficiency and/or other nutritional causes. Hookworm, malaria and schistosomiasis may contribute to the anemia as well as sickle cell anemia. The anemia is most prevalent and severe in pregnant women and are school children.

Iodine deficiency: A goiter survey was carried out in Kisoro, Hoima, Bundrasiyo, Kapchorwa and Masindi areas in 1991 by Kakitahi and Olico-okeu. These are areas that are partly in the highlands and over 70% of primary school children were found to have goiter.

Vitamin A deficiency: A large survey of about 5,000 children in Kamuli district was carried out in 1991 by Kawuma. Vitamin A deficiency was considered a public health problem based on 2.7% of those examined having night blindness, 0.3% corneal ulcerations and 7% Bitot spots.

Maternal Malnutrition: Protein energy malnutrition, was found, particularly in pregnant and lactating women. Low birth weight rates are reported as 20%. It was noted in the 1990 Annual Maternal Child Health Report that women tend to reduce their intakes in a course of pregnancy in an attempt to give birth to smaller infants. However, no data are given in support of this information.

In summary, stunting was found in various locations of Uganda in about a third of children under age 5 yr. Stunting was also found to be more prevalent than underweight-for-age which was present in about 20-25% of children. Stunting and low weight for age increased sharply in the second year of life and was found to start under 6 months of age. No catch up or improvement in the situation was noted by the time the children were 5 years of age. Several studies showed more stunting in boys than in girls though the age distribution of both groups were similar. Wasting or overt kwashiorkor and/or marasmus were seen in only \leq 1% of children, except in areas such as Karamoja where severe PEM and wasting were seen in up to 16% in times of drought.

Data available prior to the political turmoil of the 1970's and early 80's showed that in the 1960's about 30-35% of young children to have protein energy malnutrition.

Other nutritional deficiencies found were widespread anemia, aggravated by malaria, hookworm, schistosomiasis, iodine deficiency and evidence of vitamin A deficiency, at least in Kamuli district. The main determinants were thought to be poverty and insufficient household food, high illness burden particularly of diarrhea, respiratory infection, malaria and measles, lack of knowledge about suitable infant feeding, and maternal malnutrition giving rise to low birth weight and possibly suboptimal lactation.

There is no hard data available on maternal malnutrition except statements that women have heavy work loads, inadequate intake to meet their reproductive and work energy needs and also have a high anemia prevalence. Poverty is a pervasive factor; food is often sold as cash crops for necessary school fees and other pressing needs. Also in the preharvest period there tends to be household food shortages with inadequate stores of food to feed a family unless there is cash from income generating (?) activities.

Weaning Practices

Review of weaning practices and the supplemental feeding situation is based on studies carried out in Kyeyi; a review of fermented foods for weaning children, the vitamin A survey and the Report for the Food and Nutrition Board (1992) and several other studies.

Several of the surveys and studies provided information on weaning foods and breast feeding practices. The recently carried out assessment of breast feeding by the Well Start program is very helpful.

Mbarara - SWIP, Baseline Survey, April, 1988.

Prelactal foods: During the first few hours these were given to 70% of the newborns were found to be fed water, herbs in 3%, cow's milk in 10%, mushroom soup, millet and porridge in up to 10% and nothing in the remainder of children.

Breast feeding was initiated within 1-4 hours with a mean of 10 hours. Breast feeding was universal below 1 year of age 50% of the infants were breast fed in the second year and by year 3 only 6% were still breast fed. Infants that were breast fed in the third year had a higher degree of malnutrition than those not still breast fed and received fewer meals per day. Similar findings were found in Arua in 1987 based on a survey by an Italian NGO with the malnutrition attributed to insufficient supplemental feeding.

Supplemental feedings: The first solids were introduced early in over half of the children, by age 6 months. In addition to breast milk, between 3 of the 4 months 90% of the infants were introduced to beans and 3-5% introduced to cassava, greens and ground nuts. Thirteen percent of the infants at 3-4 months were

given matooke and 3% millet.

Between 5-6 months matooke was given to about 40% but meat, greens and tomatoes were between about 5 and 8%, millet and potatoes to about 18% of children. By 9-10 months Matooke was taken by 84% of the infants with ground nuts in 18% millet porridge in about 60%, and cow's milk in 22%. Ground nuts, potatoes, meat, maize and ghee were given to about 3-18% of children. By one year of age the diet showed a greater intake of matooke and beans and between ages 3-5 yr. children took the adult diet with matooke the predominant staple followed by beans, ground nuts, cow's milk, millet and meat only in 12%.

The cereal grain intake is low in all age groups. Pulses were eaten in 20% and if one include ground nuts than 30%. Protein of vegetable origin and some from milk were the mainstays of protein supply, meat being eaten by a very few people. No sugar was eaten and most energy came from oil seeds. Abundant green vegetables were eaten by older children and adults and most of these came from pumpkin, bean and some leaves from specially grown greens (dalu) but not much else.

Weaning information from the Kamuli and Kyeyi surveys were furnished by studies by el Sserenjo. Emphasis was of the dietary studies was on sources of vitamin A in the diet. Diet was studied in 210 children randomly selected from the larger sample of 5,074 children.

Pre-lactal feedings: Most infants were given water with sugar as soon as they were born. In one village the first milk or colostrum was expressed and discarded being considered bad for the infant. Most mothers started breast feeding right after birth, weaning was started at about 6 months of age when the mother felt that the breast milk no longer was sufficient for the baby.

The first food given was usually dilute cow's milk then maize porridge were preferred. Millet was believed to be too coarse for the child. The maize porridge was made from commercially obtained maize meal and no milk or sugar were added. Ground nut, soy, sesame, were used in older children but vegetables in general, were given infrequently and only to older children and adults. Ground nuts and beans also were not started until later on in childhood and had to be purchased quite often rather than from on the farm.

Many adults felt that dark green leafy vegetables were unsuitable for young children as the taste was bitter and that the child could not chew the leaves that were too stringy. In olden times green leaves were sun-dried and stored for future use but this is not done at the present time.

Fruit is eaten by children of all age except that oranges and sweet bananas are denied the children as these are sold for cash.

However children are allowed to eat unlimited amounts of mango and pawpaw and jack fruit was considered to aid in digestion. In terms of animal source products milk is the main source, meat is rarely eaten except on festive occasions and for visitors and fish is expensive but may be mixed with the staple. There is a limit on catching small fish people are not allowed to catch these. The large fish are used for fish processing plants. The milk used was mainly skim milk left over from the ghee making. Fresh whole milk is much more expensive than skim milk and only dilute skim milk tends to be used and is occasionally soured. Foods are rarely fried with fat except some vegetables such as cabbage. Eggs are considered too few to be eaten by the family and are sold for cash.

A closer examination of the portions eaten by young children revealed was found that the children ate mainly the staple and then the relish or gravy portion is mainly dilute watery gravies with the solid substance such as beans, meat, greens usually not eaten by the child but spit out or given to the older children. Also confirmed was that the lead male in the household ate over half or half of the prepared sauce or relish that is placed on the staple regardless of the size of the household. Also noted was that when soy or ground nuts were used very little of these were put into the stew mainly sprinkled on top.

Survey at Kiyeyi Teaching Health Center. The survey was carried out on 209 children from 105 households breast feeding was found to continue up to 18-24 months. Fifty percent of children were supplemented by age 4 months and 91% by the age of 6 months.

Weaning started at 4-6 months and the most often used foods were maize porridge and cow's milk. Millet was not used until later in infancy. A millet bread was prepared and sweet potato and cassava were often used for all three meals with greens added or perhaps some soured milk. The type of food used depended on the purchasing power of the family.

Use of home processed fermented or germinated foods for infant and young child feeding.

In a review of food processing in reference to infant foods in Uganda (Sserunjogi, 1990), the main processes found some sun drying, fermentation to produce soured porridge, detoxification of certain cassava species and the addition of souring fruits to foods - mainly milk. Germination and fermentation are of particular value for infant feeding in health and in diarrhea disease.

A problem with many weaning foods is their high bulk and low nutritional value with low energy density and low fat content. Millet, sorghum porridge, in particular soured and left to ferment or mixed with ash is popular in some areas, particularly the Southwest. A rapid method of souring is to add tamarind or lemon

to millet or sorghum. This reduces the viscosity and the acidity improves the flavor.

Soured milk is used in many pastoral areas if not all of the milk is sold for cash. Ghee is produced and only skimmed milk is left for household use. Soured milk is particularly used by lactating mothers and by young children.

Sserunjogi and Tomkins (1990) carried out interviews with mothers in four ecologically separate regions of Uganda (Arua, Mukoro, Kabale and Mbarare) concerning infant and child feeding in health and diet. They found widespread use of fermentation and germination of cereals and tubers, from 87 to 90% particularly in the north (Arua) and Southwest - Kabale. These household processes are recommended particularly for use in diarrhea, increasing the palatability and intake by sick infants. Foods used for fermentation and germination were cassava, millet and sorghum, plantain and occasionally maize. Souring of milk was also used by the addition of acid juices.

In summary, food processing was found to be popular at a household level. Advantages are that the porridge are rendered less bulky and more calorically dense. The increased acidity is antibacterial and hydrolyses of phytates increases the bio-availability of zinc and iron.

Morbidity Pattern in Childhood

Children under five years of age, based on Ministry of Health - Planning Unit data (1989) present the following picture: The commonest causes of illness in descending order of prevalence are:

- Malaria
- Acute respiratory illness/pneumonia
- Diarrheal Disease
- Anemia and nutritional deficiencies
- Tuberculosis

The number of HIV infected infants with high secondary infection rates particularly with tuberculosis, chronic diarrhea and severe malnutrition are dramatically increasing.

Factors thought to influence health status and poor accessibility and utilization of health services

Almost 27% of the population live within 5 km. from a health facility, 30% within 5 to 10 km. and 43% beyond 10 km from a health facility. Only 9% of rural households are visited by a health worker and only 14% of households were visited by any type of government extension worker. The ratio of health workers to population is very low.

Sanitation and Environmental Conditions

The latrine coverage of the population is generally low from 10 to 80%. The overall coverage is closer to 20%. Access to safe water is about 20% overall, with most of the water being from unprotected and open sources. Households tend to be crowded. Malnutrition particularly stunting and even moderate PEM and anemia are all associated with increased severity of infection.

ANNEX V

Supplemental Feeding Information from Focus Groups

Supplemental Feeding Information Based on Mother's Focus Groups

Rukungiri

Supplementary feedings should begin at the first sign of insufficient breast milk, as shown by a child being irritable or crying during breast feeding - i.e. needs supplementary food.

- If baby does not gain weight on breast milk alone - this indicates poor milk.
- Mothers express anxiety if something happens to them and they cannot feed their babies. The babies need to get used to food and cow's milk early.
- Feeding well on the family diet promotes growth.
- Supplementary foods should start at 4 to 6 months. Millet porridge is considered an important first supplementary food. Beliefs: A good mixture for infants is beans, peas, greens, milk. Not good are sweet potato and matooke, which are thought to have little nutritional value. Sweet potato is tough to digest by child.

Iganga

Insufficient breast milk prompts mothers to supplement infants at 4 months when the child gets irritable and is not satisfied by breast milk.

Mothers say they know a good diet is essential for proper growth of the infant they have to make do with whatever is available in terms of diluted cows milk, maize porridge and family food. The family diet of cassava or rice is considered unsuitable for a growing child. The high starch content, is thought to cause constipation.

Food considered essential for growth are fish, soybean maize flour, milk, pawpaw, bean soup. They can buy these only if they have money. Therefore lack of family food which can be mashed prevents growth. Also there is a problem of inappropriate knowledge of how to use available food for young children.

Supplemental Feeding Information Based on Father's Focus Group

Iganga

Concept of body building foods includes eating beans, greens and fish. This is good nutrition and leads to good

health and nutrition as measured by happy children. The mother knows when the child grows well. The father is responsible for food in the house - by buying and cultivation of food. Food purchase is up to the man. He controls the granary and what to sell.

Health Assistant Focus Groups:

Iganga

They feel there is little malnutrition in children < 2 years, only kwashiorkor. Proper feeding leads to good nutrition.

The HA's felt that ignorance (lack of knowledge about the nutritional value of available foods, their preparation and low frequency of feeding) is the leading cause of malnutrition. They felt that it was not their job to do growth monitoring.

ANNEX VI

**Observation of EPI, Antenatal Clinics
and Home Visits**

Observations of and EPI, Antenatal Clinics and Home Visits

EPI Clinics

Iganga District Hospital

EPI Static Clinic

A child welfare clinic was observed. The children attending were born in Iganga Hospital; the unit being adjacent to the child welfare clinic and also attracts children from the area of Iganga town. The clinic is run by assistant midwives who know many of the mothers and their children having delivered them in the maternity unit. About 35 children were seen in one morning. The clinic appeared efficient and well organized.

The clinic had three main activities going on: registration and checking on ages and needed immunizations; health education group sessions; and growth monitoring (weighing, plotting of weight, counseling of mother).

The health education was given in a group of 15 to 20 mothers and lasted about 15 min. for each of 2 groups. Immunizations and complications, infant feeding, household sanitation were discussed using UNICEF picture posters. A question/answer period followed with wide-ranging questions about family planning, AIDS, etc.. The midwife attempted to answer questions as best she could and promoted good audience participation.

On the growth monitoring side weighing was carried out using a Salter scales. Mothers were not involved in the weighing. After the weight was plotted feedback and discussion with the mother took place but only for 1 to 2 minutes.

Immunization were skillfully and quickly performed. Each child had a separate sterile reusable needle and syringe used. Mothers also received tetanus toxoid at this session.

Static Clinic at Bugangari, Rukunguri

The clinic was held outdoors and indoors at a health center. The clinic was run by an enrolled midwife, an assistant health inspector officer and an assistant nurse. About 20-25 children were seen.

Weighing and growth monitoring took place out of doors under a large tree with the scale suspended from a branch. The mothers actively participated in the weighing i.e. placing the child into the weighing pants, suspending the child from the scale and then

reading the scale under supervision. Plotting of weight and individual counselling of the mother took place for only for 1 to 2 minutes by the assistant nurse.

A group lecture on immunizations, household sanitation and infant feeding took place under the tree and lasted 15 minutes UNICEF picture posters were used and there was little in the way of audience participation and no questions asked. Immunizations of infants and mothers (for tetanus) was carried out indoors. A separate sterile needle and syringe was used for each child.

Mothers were taught to store start foods for the infants at 4 months then encouraged to breast feed for 2 years. (The mothers laughed in response to this last statement saying their " husbands must then feed us very well ").

Mobile EPI Clinic Iganga District

An extremely busy clinic with over 100 children was observed. The focus of the clinic was immunizations and run mainly by a harassed and overworked Health Assistant.

Women lined up in a long queue for their immunizations. An assistant health orderly registered the children, checked their age and needed immunizations. There would ordinarily have been no weighing or growth monitoring at this clinic had not the WINS team set up weighing and plotting of weights on growth cards. It was noted by observation that these were many obviously malnourished children, some of whom had measles recently and were under one year of age.

No health education talk was given. The H.A. who gave the immunizations used a separate needle for each child but occasionally the same syringe. He did not use every cleansing agent and often after each immunization rubbed his unwashed finger over the immunization site to help vaccine absorption. His manner with the children and mothers was often gruff and rough, he also yelled at the mothers.

Antenatal Clinic

Kisiizi Hospital Static Clinic

The clinics saw about 50 women in one morning mainly in the 2nd and 3rd trimesters of pregnancy. The clinic was run by 2 trained workers. The Safe Motherhood Program and had recently interrupted their training.

Every woman had a history taken, Blood pressure checked and was experienced old neural palpation was carried out for fundal height lactal position. Also a fetoscope was used to check the fetal heart after 5 weeks of pregnancy. The affirmities were checked for oedemas.

The midwife did not weigh everyone despite their being a scale. If a woman looked slight she was measured and if under 5 feet she was advised to deliver in the hospital.

The midwife checked the conjunctive (lower lid) for anemia and if pale sent the woman for a hemoglobin. If anemic the woman is occasionally given iron. Although the majority of women receive extended care they either deliver at or near their homes. Only high risk pregnancies are delivered in the hospital.

ANNEX VII

Interviews of Midwives and TBAs

Interviews of Trained, Enrolled, and Assistant Midwives and Traditional Birth Attendants

The above providers were interviewed to see what role they played in advising mothers about food intake and diet during pregnancy and lactation and about infant feeding. Also, we wished to find out if the above health workers obtain any measurements on mothers during pregnancy or lactation or obtain birth weights.

Interview with trained midwife at Kisiizi hospital. Rukunjuri

Training consisted of a three year program. Recent retraining was carried out by the Safe Motherhood Program at Rukunjuri. The midwife in turn has trained groups of enrolled midwives and some traditional birth attendants (TBA).

Ante-natal clinic, Kisiizi Hospital: Most women do not come to the clinic before the second trimester. Although the women come for ante-natal care most of them deliver in their own homes with the help of relatives or TBA's. However, high risk pregnancies are referred to the hospital for delivery.

Examination in the ante-natal clinic consists of blood pressure, height, only if the mother is short, and if the height is under 5 feet or 152 cm. the mother is put into a high risk category and hospital delivery is recommended. Scales for weighing are present but rarely used. Pregnancy weight gain is not recorded. A fetoscope is used to listen for the fetal heart. Fundal height is measured to estimate gestational age. Feeding advice is given to the pregnant woman.

If pallor of the conjunctiva is noted then the mother has her blood checked for anemia and is given iron and Folic Acid. Some nutrition advice is given to mothers but no classes or talks are given.

During hospital deliveries plastic or rubber gloves are used to protect the midwives against HIV infection. Foot suction devices are available for use in the newborn. Following delivery the mothers remain in the hospital for a few days with the babies next to their beds. Following C-section they remain for one week.

Iganga Hospital: Midwives and assistant midwives were observed working in a child welfare clinic in the outpatient clinic adjacent to the maternity unit. Many of the midwives knew the mothers and had helped delivered the babies that they now were seeing in the child welfare clinic. The midwives presented health education lectures to the mother attending the clinic about immunizations, infant feeding, family planning and anything

else the mothers wanted to know about.

The midwives gave immunization at the clinic. They weighed the children and recorded their weights. True growth monitoring, discussing the child's growth with the mothers took place in individual sessions. However, the counseling although individual was extremely brief, lasting 1 or 2 minutes.

Assistant Nurses

Interviews with 2 assistant nurses at Rukunjuri revealed that their training courses last 9 months. The candidates enter the course having completed Standard Four.

Outreach activities: The assistant nurses may accompany the mobile UNEPI teams when they go to the field 3 to 4 days a week. The communities are mobilized prior to the outreach activities. These assistant nurses become involved in giving talks to the mothers on immunization, weaning, foods for the infants, occasionally on nutrition education for pregnancy and help with growth monitoring and counseling the mothers. They may make one or 2 home visits a week along with the health assistants.

Traditional birth attendants

Retrained TBA, Rukungiri

The TBA was retrained by a midwife. She can now use a fetoscope to check the fetal heart and stethoscope but has no access to use of these for her own day to day private practice. She also can take blood pressures. She spends most of her time, however, on the Community Health Council and works as a TBA only a few days a week and delivers about 2-3 babies per month.

TBA in Iganga in Eugangeri

The TBA, about age 50, would very much welcome formal training. She delivers about 4 babies per month and is in practice by herself.

Ante-natal care:

Most women consult her from about the 5th month of pregnancy onward. The EDC is determined from the mother's last menstrual period and the size of her uterus. The TBA has no scales, thus never takes any weight of the mother nor obtains birth weights. She feels that some women do lose weight or gain little weight during pregnancy or the mothers say they were fatter before they became pregnant. The TBA gives advice to mothers if the mother appears to be losing weight or gaining poorly. Her advice consists of telling the mother to eat a variety of foods and a balanced diet and gives them her own herb mixture. The TBA

advises against eating only cassava because it is difficult to digest but urges the mother to eat posho, tomato, ground nuts, soya and to drink milk. If a mother loses her appetite she urges the mother to eat eggs, meat, fish, if affordable, and some herbs. The TBA says if the mother loses weight she can have a large baby and sees no great problem with losing weight except that it makes the mother weak.

Advice for nutrition during lactation

The TBA advises the mother to eat millet porridge, fruits and a balanced diet. If a mother has difficulty breast feeding or if a mother is sick, the TBA advises supplementary or weaning foods.

If, during the prenatal visit, the TBA sees the mother is short she does not feel that this woman will have any particular problem delivering the baby.

The TBA acknowledges that some mothers have pica during pregnancy. She advises against this by telling the mothers that pica can bring disease and cause miscarriages. The TBA feels that most women eat well during lactation and no special foods are discouraged or encouraged. If the mother does not seem to have enough money for food the TBA advises the mother to sell some of her clothing to get money. The TBA's perception about infants growth is that it is usually normal and remains so in the second year and sees no particular problems. The TBA only observes the infant she delivers and only a few days after birth.

The TBA felt that the main health problems in pregnant women are abdominal pain (non-labor pains), fever and malaria. She prescribes her own herbal remedy for some of these complaints. If a woman looks pale (eyelids pulled down appear white) she feels that the mother does not have enough blood and refers her to the clinic or to the dispensary for medicine to improve blood.

Labor and delivery

The TBA feels it is important to record every delivery. The mother comes to the TBA delivery hut, a separate hut in her compound to deliver the child. The woman spends about 12 hours following delivery. The TBA says that she has never had to refer a woman to a hospital for a difficult delivery, the nearest facility being 10 km. away. The TBA has all the women she delivers bring in their own new razor blade and thread to tie the cord and a clean cloth to put over the cord. No preparation or medication is placed on the cord, only the clean cloth.

Following delivery the mother is washed and changes her clothing before she nurses the baby. A prelactal feed is given to the newborn by the TBA with a cup and spoon which consists of

2 to 5 teaspoons of boiled water. The mother then starts nursing the baby within 3-4 hours. A followup of the mother and child is carried out a few days later. During lactation the mother is advised to eat millet porridge and fruit and "a balanced diet".

Low birth weight: infants, premature

The TBA advises the mother in the care of the low birth weight infant. She recommends that the baby be given diluted cow's milk or expressed breast milk. The mother is instructed to squeeze or express the milk into the infant's mouth.

Of interest is that the TBA recommends to the mother that she have three tetanus toxoid shots during pregnancy. The TBA complained that she never has contact with the formal health system and that all she has learned about AIDS and tetanus comes to her by radio.

She says that sometimes mothers can't breast feed because of maternal illness but otherwise she sees no problems about infant feeding and feels that the infants grow well and there is no particular problem about nutrition.

The TBA would like to obtain rubber gloves to protect herself against AIDS and she would like TBA training. She has no involvement at all with family planning.

TBA Interview: Rukunjiri- Kagunga village

The TBA here is untrained and is about 60 years old and has been in practice for about 35 years, delivering about 2-3 babies per month.

Prenatal care

Women come to see the TBA about a month prior to delivery. She palpates the mother's abdomen to see if the mother is ready to deliver and advises the mother not to push "before her time". The TBA checks on the mothers immunization status and recommends the mother have 5 tetanus-toxoid immunizations. She learned this from visits by the Community Health Worker (CHW) unlike in Iganga which not a CHBC mobilized area. The TBA also checks the mothers conjunctiva by pulling down the eyelids and if these are white she refers the mother to the clinic for treatment of lack of blood and instructs the mother to eat better. For example, she advises millet and greens dodo. Mothers are instructed to provide a new razor blade, thread and a clean bandage to put on the cord and the TBA prescribes herbs before the birth.

The TBA carries out the delivery in the mother's home. She also cuts the cord with the mother's new razor blade and ties it with thread and puts the clean cloths over the cut stump. No

other substance is applied.

Neonatal period

The newborn is given a prelactal feed of five teaspoons of boiled water. The nursing is started later that day, usually about 3-5 hours later. Advice on infant feeding is given. The TBA tells the mother to keep the baby warm and covered and advises the mother to breast feed the baby for at least 6 months. For a low birth weight baby, clinically determined because no birth weights are obtained, she advises the mother to feed small amounts and if the infant cannot suck to use her own milk expressed and put into the babies mouth. If this is not possible the mother is told to use porridge made of millet mixed with her own milk.

Dietary advice for the lactating mother

The TBA advises the mother to eat millet porridge, tomatoes, cabbage, dodo and beans. There are no dietary prohibitions.

Post partum and other follow up visits

This TBA visits the mother three days post partum and then again about 4-6 times during the first month and finally three months later and checks on the mother and baby to make sure the mother is all right and the baby is growing. She checks the baby every visit to see if the baby is in good condition and continues to grow mainly by appearance. If the baby appears not to be growing well she instructs the mother to give food to the baby in addition to breast feeding. If child and mother are found to be sick she refers them to the medical officer at the clinic 1 km. away. The TBA neither owns nor uses a scale.

The TBA knows about AIDS from the nearby clinic staff and CHW's and from the radio. She doesn't think she has ever seen a case.

If a mother's labor is prolonged, she is referred to the medical officer at the clinic 1 km. away. The Community health worker has done teaching of this TBA, advising her not to use dirty instruments to cut the cord.

The TBA does not generally inquire about the amount of food eaten but rather what types of food the mother is eating and does advise about diet. She advises posho, tomato, cabbage, porridge, fish, meat, eggs and dodo. She sees a woman that looks thin and advises them to eat more.

In summary the traditional birth attendants and trained midwives and assistant nurses would appear to offer an excellent opportunity to advise about food, nutrition and diet during

pregnancy and lactation and advise about infant feeding both breast feeding and the introduction of weaning foods. Also because the traditional birth attendant appears to make home visits to see both the mother and the child it could present an excellent opportunity for early growth monitoring. It appears that midwives, assistant nurses, and the traditional birth attendants would offer an excellent vehicle for improving both maternal and infant nutrition. It is important they receive training and ongoing supervision.