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INFANTS' ENTITLEMENTS AND BABIES' CAPABILITIES: EXPLAINING INFANT HUNGER[1]

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Introduction

The focus of this paper is infant malnutrition, one of the most important public health problems among infants and toddlers in Ghana and one which has persisted, even worsened, in spite of increasing agricultural output and national and international concern, witnessed in applied research and projects to address hunger.[2] Available evidence suggests that protein energy malnutrition is the most widespread and serious of the nutritional disorders among children.[3]

It is widely reckoned to be a result of inadequate intake of food, combined with poor environmental sanitation (GSS and Macro 1995) or effects of repeated, improperly treated illnesses (Sommerfelt and Stewart 1994). In fact a number of medical, demographic and economic factors have been proposed to explain infant hunger and poor nutritional status. This essay considers the validity of several such explanations and then turns attention to the infant feeding process. Ultimately the discussion is about the need to take into account changes occurring in gender roles inside and outside the home, particularly divisions of labour and responsibilities of various kinds between males and females, young and old, likely to be affecting infant feeding and care, when trying to understand the determinants of under-nutrition, a major factor affecting child survival and development in Ghana This is an area of research which has lacked systematic exploration in African or other developing country settings.[4]

Single factor explanations relied upon in the past, in addition to the environmental sanitation and sickness mentioned above, include: nutritional – food availability and quality; demographic – length of birth spacing or parity; economic – poverty; or medical – lack of vaccinations; or gender inequality –in terms of access to education, etc.

Accordingly a selection of the related evidence is reviewed. Ultimately a call is made for comparative, applied ethnographic work, in order to promote the needed understanding on which the design of more effective, gender sensitive, nutritional policy responses and programs might be based.[5] In this regard the discussion calls attention to several examples of

relevant evidence from elsewhere in the region, and seeks to complement the work of the numerous researchers, activists and organizations in the country, currently deeply concerned to promote effective solutions to this profoundly serious, nutritional problem, which has been a matter of concern for some decades but appears recently to have escalated to crisis proportions.

Following the early pioneering work of Sen (1977; 1981) on the issue of hunger and famine, the discussion takes an entitlement approach, pointing to ways in which babies traditional entitlements appear to have been whittled away by several ongoing processes of change, affecting the roles, relationships and resources of their mothers (inside and outside the home), on whom they crucially depend for breast milk and loving care in the first months of their lives. The discussion accordingly starts by looking at the statistical analyses attempting to link under-nutrition in Ghanaian infants with several potential explanatory factors. The figures demonstrate the incompleteness of several popular explanations as to the causes of malnutrition.

Statistical Evidence of Hunger, Under-Nutrition and Associated Factors

The disastrously high and even rising levels of infant and toddler malnutrition in several countries in the region provide incontrovertible evidence of persistent hunger of babies, and have been authoritatively documented in several rounds of Demographic and Health Surveys (DHS).[6] These tragic data are undoubtedly among the findings of these surveys which are of the greatest concern to national governments and households in the region. By now the long term consequences of such early, prolonged suffering are clear – truncated human physical and cognitive development, with potentially devastating impacts for the large numbers of individuals involved and the economies of their nation states.

The national Demographic and Health Surveys (DHS) and the subsequent comparative analyses, examining evidence on the nutritional status of babies and toddlers, provide an unparalleled, rich source of information on patterns of infant feeding and malnutrition in several African countries, with possibilities in some cases of now examining trends over time, as well as carrying out cross-national or cross cultural comparisons.[7]

The trends documented in several rounds of Ghana Fertility Survey (GFS) and Ghana Demographic and Health Survey (GDHS) in Ghana have provided evidence of increases in wasting/stunting among some population segments and time periods (GSS 1997). The GDHS 1993 revealed that more than one in four children 3-35 months of age were stunted, about the same as in 1988; that is thirteen times the level expected in a healthy, well nourished

population (GSS and Macro 1995:2). The proportion underweight had also not changed (30/31%) in the same period and was 14 times higher than in a healthy, well nourished population. Overall levels of stunting and underweight were not much different in the 1998 round of the surveys, being still much more serious in some regions than others and remaining a subject of grave national concern.

Table 1 using GDHS data on the nutritional status of babies and toddlers, indicates the incomplete nature of current explanations. Several medical, environmental and educational factors may be linked to higher levels of nutritional status, yet the fact remains that substantial proportions of malnourished babies and toddlers are still found among:

a) children with vaccination cards, vaccinated and not recently sick [8]

b) households with access to piped water and adequate sanitary facilities

c) offspring of (higher) educated mothers

d) infants who are not too closely spaced and of low parity mothers

e) babies in urban as well as rural areas

f) babies with mothers who are, or are not, employed

g) babies in households classified as non-poor

Table 1: Percent of Toddlers Underweight by Status

Has vaccination card	34
Has been vaccinated	31
Not recently sick	34
Household has piped water	24
Household has assets (non-poor) # +	23
(1) Household in an urban area	25
Mother has secondary education	22
(1) Mother is employed	30
(1) Mother is not employed	31
Has 0-2 sibs * +	31
(1) Preceding birth interval 24-47 mnths	30
Household has flush toilet	16
Household rich (5th quintile) #	13

Major Source: Sommerfelt and Stewart (1994), children mainly 12-35 months
Cited from Desai (1992) Table 6, Data source GDHS (1988).
(1) children 3-35 months
+ stunted # Source World Bank 2000

As Table 1 reveals it is only in the wealthy minority of households, and those with water closets, that the proportion of malnourished infants and toddlers sinks even below twenty percent. Simply not being poor is not enough, (a quarter of the non- poor and more than a third of the poorest are malnourished), nor are positive medical, demographic and educational factors. Moreover comparative gender equality as measured by the UNDP in the Human Development Reports, (using the Gender Development Index GDI), is not sufficient to ensure optimal infant feeding occurs. For though Table 2 indicates that on the whole countries with a higher ranking on the GDI index (within the African region) have lower levels of infant and toddler malnutrition, signifying that when women enjoy greater equality with men in education access etc. child malnutrition tends to be less prevalent, there are marked exceptions to this trend. Ghana is one such, for it falls in the category comparatively High Level of Underweight Children (26-30%), yet its GDI rank is second among all the African countries listed.[9]

Table 2: Level of <5 Malnutrition and Country Ranking on Gender Development Index (UNDP 1997)

Level of Malnutrition		GDI Rank	
		Mean Score	Countries
Low	(<20% underweight)	2.5	Zimbabwe and Cameroun
Medium	(20-25% underweight)	9.0	Mauritania, Senegal, Cote d'Ivoire, Kenya, Lesotho, Togo, Uganda
High	(26-30% underweight)	11.5	Ghana, Burkina Faso, Tanzania, Zambia, Malawi.
Very High	(>30% underweight)	13.3	Niger, Mali , Nigeria.

For explanation of how GDI was calculated see UNDP (1997).

The task in the rest of this paper is to delineate the role crises of stress and conflict, perceived to be facing mothers and affecting their ability to nurse and wean their infants. This entails presenting numbers and case studies to show that, in the face of escalating economic demands and constraints and environmental degradation, mothers' traditionally heavy work burdens of all kinds are escalating. It involves indicating how, in the context of profound demographic changes and the widespread migration of people, as well as social differentiation, customary solidarities found in kinship and marriage are dwindling,

transforming familial roles and relationships and leaving mothers increasingly alone, without their traditional supports at birth, nursing and weaning. These macro economic and demographic processes are viewed as bringing about irrevocable changes in parental roles and family life, which are divesting babies of their traditional entitlements and capabilities, and are accordingly seriously implicated in the grave and continuing crisis of malnutrition of infants and toddlers.

Such an analysis calls attention to the need for a series of appropriate responses: both applied research, to document the particular dimensions and implications of the changes occurring in different segments of the society and secondly, policy analysis to consider what are the strategic initiatives best suited to addressing the inherent problems. First the traditional status of babies is described, so that their disastrous fall from grace can be imagined.

Infant Feeding

Traditional Entitlements

For more than ninety-nine percent of human existence all infants have obtained their main nutrition through breastfeeding (Stuart Macadam and Dettwyler 1995). More than half a century ago ethnographic evidence began to accumulate on the behaviours and beliefs associated with breast feeding and weaning in African societies. For example Richards (1939: 67-8) described how Bemba babies were suckled any hour of the day or night...until they were between 2 and 3 years old, and Fortes (1949) recorded clearly the status and entitlements of a typical baby born in a Tallensi household in northern Ghana in the thirties. It was,

> the darling of the family.....
>
> Looking after baby is everybody's job–grandparents, older brothers and sisters (boys are as tender as girls with a baby), mother's co-wives, father, and most important of all, the mother. Up to the time that it is weaned, which occurs towards the end of its third year, a baby is mainly in the mother's care. For at least the first year it is wholly dependent on the breast for nourishment. It is given the breast whenever it cries or frets or the mother feels inclined to nurse it. Whenever the mother sits down to rest or has nothing else to do, her babe is at the breast, sucking hungrily or, if it is replete, just playing with the breast with its mouth, its fingers, and its toes. If the mother is away another woman of the household will give the baby medicated water to drink when it cries or will put it to her breast for comfort. It may be any woman of the family, but will usually be a co-wife. By the age of 18 months a baby's diet is being regularly

supplemented with small lumps of porridge, often premasticated by its mother. It is gradually and usually painlessly weaned by increasing its solid food (chiefly porridge) until it is eating the same food as the adults. The only time Tale women have to wean a baby abruptly is if they become pregnant through lack of self-control during the nursing period... at the age of about 3... its mother's breast is still its chief solace. (By) The completion of weaning (after 3 yrs.)... (the child) has learnt to do without its mother for hours or days at a stretch. It remains contentedly in the care of an elder sister or other member of the household. (It learns the different categories of relatives in its social space).

During these first three or four years a child's father, though he sees less of it than its mother does, is as loving and indulgent a parent. A baby can do no wrong; for, as Tallensi say, "it has no sense". (Fortes 1949: 189-90).

This picture Fortes paints is taken to be broadly typical of several dimensions of the lengthy, on-demand breast feeding, and supplementation common during the period and subsequent decades. Maximum access of the infant to the mother's breasts is ensured and family members actively support her in the task of mothering. A crucial role of the infant's father is likely to be provision of needed resources, so that the mother can rest after childbirth[10]. Meanwhile the suckling infant is protected from competition of the next sibling by the mother's (often lengthy) sexual abstinence and exclusive and frequent breast feeding (inhibiting ovulation and conception) and postponing the next birth.[11] The mother's energy and focus of attention on the new born and her continuous proximity to the infant are preserved by the support and assistance of spouse, co-wives, kin and older children, who provide needed resources and cook, fetch water etc. In addition special taboos on new mothers' leaving the compound or going in the sun etc. for varying lengths of time serve to protect and seclude the mother and child. As the infant grows the mother's combination of productive and reproductive tasks is made possible by the sharing and delegation of chores between household members. In some cases, like those of the Dagomba and Mamprussi, the new mother traditionally goes home to her mother to be mothered and supported while she breast feeds. In other cases, like the Akan, she may already be typically living with her supportive matrikin. A key point is the fact that the baby's welfare, including feeding, is a concern of several categories of family members and not the mother alone, who is afforded the time, energy and material and social support she requires in this highly valued task.

Typical features of the family systems within which such feeding patterns and practices occur include: the over arching framework of local descent group ties, providing a relatively stable and enduring context of kinship for the more temporal domestic group; the separate (as well as cooperative or complementary) production, management and allocation of resources by spouses; the lack of a joint store of conjugal goods in a context of widespread polygyny and the relative segregation of conjugal roles and interests; the partial autonomy and economic independence of wives; the solidarity of siblings and substitutability of individuals within the descent group system (exemplified by widow inheritance, fostering etc); the socialization of the young for obedience, service and altruism and their active contributions to both reproduction and production from an early age; the open or porous nature of the conjugal family role system of procreation and parenting, with frequent co-residence of non-nuclear kin and a potentially continuous process of adjustment or bargaining between partners in decisions about resource allocations.

Such family systems provided for infants and their mothers a relatively stable yet flexible and secure, family safety net of kin, and a variety of individual relatives to share the mother's (domestic, agricultural and trading) work, (often done in small groups of sisters, co-wives, mothers and adult daughters) and to whom she could delegate baby minding or holding as required. Older siblings (full and classificatory) were ready and able to mind babies. Systems of fostering also provided cousin caretakers on demand. Babies who provided for the replenishment and continuity of the descent groups were admired and desired by males, females young and old alike. (Looking after baby was everybody's job.)

Comparative anthropological studies have confirmed the required, supporting elements of optimal infant feeding. Nursing mothers, especially new mothers, need support and mothering from experienced others, in order to successfully initiate and continue lactation. The new mother also needs a hiatus in her normal daily activities while nursing is being established (Raphael and Davis 1985). [12] Where such support networks are not in place there are indications that breast feeding is likely to be less successful (Dettwyler 1987).

Breast milk and breast feeding are closely linked to the physiological processes and health and disease patterns of both mothers and babies, such that alterations of this ancient pattern are likely to have profound implications for the physiology, growth and development and health of human infants and children, as well as for the physiology and health of women (Stuart Macadam and Dettwyler 1995:5). Unfortunately the appreciation of these connections is surprisingly quite poor. However awareness that early childhood nutrition can have long

term impacts on individuals' health and well-being, physical, mental and emotional, is growing apace.

Infant Feeding Now

Currently optimal breast feeding, as promulgated by WHO and UNICEF, is exclusive for 4 to 6 months, a big drop from the traditional two or more years. But in reality even this length of exclusive breast feeding is now found to be very rare.[13] In Ghana in the most recent GDHS (1999:30) only 43% of children 0-1 month were reported to be exclusively breast fed and this percentage drops rapidly with age to one in four children at age 4-5 months. Supplements are introduced at a very early age and by five months half are receiving them. [14]

Micro studies of the growth patterns of exclusively breast fed infants in Ghana have shown that such a pattern of feeding is by far the best for infant growth and development in the first four to six months of life (Nti 1999; Brakohiapa 1999). Statistics have also shown that when feeding is inadequate, the impacts of hunger accumulate over the baby's crucial, vulnerable, growth period, 3-35 months, the time when breast feeding should continue and careful feeding of suitable supplementary, weaning foods take place from the age of 4-6 months. (See Table 3).

Table 3: Percent of Ghanaian Babies and Toddlers Stunted, by Age Group

3-5 months	6-11months	12-23months	24-35months
4.7	13.1	33.2	42.4

Sommerfelt and Stewart (1994: 21) Table 5.1.

The 1993 GDHS reported that 40 % of infants under 4 months old were being given some form of supplementary feeding, a practice which is not recommended. In fact the too early truncation of exclusive breastfeeding and the inadequacy of care during the weaning process are widely recognised as being seriously implicated in the sad picture of hunger and malnutrition. The GDHS 1993 indicated that very few babies indeed enjoyed free access to the breast and breast milk and were fed exclusively on breast milk, as recommended by WHO. Even in the first three months almost all were given other liquids and solid food began to be introduced. In GDHS 1993 only 8% of infants under age 4 months were exclusively breast fed. In 1988 the level was two percent. Discussion of these findings of the GDHS 1993 noted that possible reasons for lack of exclusive breastfeeding were that,

> Some mothers believe that the child needs other liquids or foods in addition to breast milk and water. Others want to accustom the child to foods other than breast milk before returning to work. Some mothers feel they do not have enough milk to satisfy the child. Still others want to be able to leave food for their babies when they go out and leave their babies at home (GSS and Macro 1995b: 19).

The matter of mother's work is crucial, since women in Ghana have long been recognised to be comparatively very active in both the productive and reproductive spheres, with high levels of economic activity as well as fertility.[15] As already indicated this combination of potentially conflicting activities has been facilitated by several well-documented mechanisms. These have included: truncation of exclusive breastfeeding and early supplementation with weaning foods, allowing others to feed the child in the mother's absence; [16] long periods between births, shown to vary by type of mothers work[17] and the presence of others with and to whom productive and reproductive tasks can be shared or delegated;[18] and adoption of survival strategies which involve either economic activity near the home or a shift of child care to the place of economic activity.[19] The practice of sending toddlers to the rural areas to be cared for by grandmothers, while their mothers work in the towns has been documented for several decades.[20]

Significantly detailed studies of children's nutritional status and lactation have shown that mother's milk production becomes inadequate, when there is too early supplementation, chiefly with low energy cereal gruels with little or no protein enrichment. This is a widespread and common practice in Ghana (Commey et al. 1985). Moreover there is also conclusive statistical evidence that the risks of diarrhoea are higher among babies who are not exclusively breast fed or weaned before 6 months of age.[21] Recent attempts have been made to move beyond single factor analyses and examine impacts of both calorie consumption and health and development variables on infant nutrition (Asenso Okyere et al. 1997).

Given the dimensions of the infant malnutrition problem and the pervasive pattern of supplementing infants' diets with maize porridge, nutritionists have been eager to assess ways of making such pap more nutritious for babies. Experiments have for example focused on methods of enriching the protein content.[22] With regard to infant care, recent detailed observations carried out on Ghanaian babies have shown how infants need careful attention to their delicate digestive demands as well as feeding.[23]

Babies were and still may be the focus of much solicitous attention from adoring mothers and other family members. The question is what has now happened in recent years, in so many homes or mothers' work places, to disrupt the infant's status and entitlements to nursing

and care, in relation to its own mother and other women classified as mother, as well as father, siblings and others, to the extent that infant feeding regimes have been disrupted, resulting in a quarter of the infants in Ghana and elsewhere in the region being stunted or underweight, following persistent hunger? A look at the entitlement approach is appropriate here, before proceeding to address this question.

Hunger and Famine: the Entitlement Approach

When famines continued to occur in the twentieth century, the traditional approach was to look for a decline in food availability. However as Sen (1984:453) stressed, starvation is a matter of some people not having enough food to eat and not a matter of there not being enough food to eat. Accordingly he developed his now well known approach of entitlements.[24]

In his book *Poverty and Famines: An essay on Entitlement and deprivation*, Sen (1981) had presented evidence to show that in many large famines in the recent past in which millions of people died, there was no overall decline in food availability at all. In fact the famines occurred precisely because of the shifts in entitlements, resulting from the exercise of rights that were considered quite legally legitimate. Thus in his essay on Family and Food, Sen (1984: 346-68) remarked that the food consumption of a human being depends, among other things, on the power of the family to command food and the division of food within the family[25].

Accordingly his studies focused on the ways and means through which a family could acquire bundles of commodities, making use of the legal, economic, social and political opportunities faced by the family. Starvation was seen in this context as resulting from a failure of entitlements (Sen 1984:346). However as he went on to discuss, entitlements of families do not determine what particular family members can eat and the division of food within the family can be a variable of importance of its own (Sen 1984: 346). Reviewing global evidence on food distribution within the family he noted that there is a good deal of evidence that food is often distributed very unequally – with a distinct sex bias (against females) and also an age bias (against children). He noted that such biases have also been observed in the richer countries[26] and that they are particularly noticeable in poorer developing countries.[27] There is apparently ample evidence on this problem from different parts of the world, including Africa[28]. However Sen admitted that hard evidence on these phenomena are scarce, in view of the difficulties encountered in recording in detail consumption patterns of different household members.[29] The solution is to document under

nourishment; once done it is clear there is disproportionate under nourishment of children. This in turn underlines the need to examine entitlements to nourishment within the family. Sen (1984:376) argued that there is a good case for judging individual well being, including nutritional status, in terms of capabilities of persons, stressing that this capability perspective can be used for children, especially in cases where hunger and malnutrition are common.

Infants at Risk: the Household Economy of Care

In recent years growing attention has begun to be paid, from a variety of disciplinary perspectives and from macro and micro level view points, to the impacts of the changing allocations of human time, especially female, between **occupational roles** (paid or unpaid); **domestic roles** (including subsistence work crucial for household survival) and **parenting.** At the global level macro trends have been indicated in writings about the feminization of labour and the parenting deficit.

In the case of international organizations the recent UNDP focus on the Caring Economy in the *World Development Report* and the eventual incorporation of care into UNICEF models on child nutrition in the nineties, are illustrative of the realization that such changes, if they involve a diminution of unpaid caring activities in the household, may be linked to profoundly serious outcomes for human development, in particular child development. Meanwhile studies, such as that of Basu and Basu (1991) in India, have called attention to the question of **time poverty** or **time strain** as a potential link between mothers' work and child survival.

Accordingly the next topic of focus is Ghanaian women's high and escalating levels of economic activity, including occupational and domestic, paid and unpaid, inside and outside the home.

Increasing Female Workloads

Three quarters of women in Ghana are recorded as in the labour force. (GDHS 1999). In fact Ghana is an extreme case, as it is the only country accounted to have 101 women in the workforce for every 100 males, and statistics show the numbers and proportions of females recorded to be working, rising faster than those for males.[30] Women are described as the backbone of the agricultural system, constituting almost 52% of all agricultural workers in 1988. Numbers of females in agriculture are also increasing at a faster rate than numbers of males.[31] These figures are clearly impacted by the continuing massive international labour migration of men and the comparatively high proportions of male youths, who either stay in

schools and colleges or migrate to the urban streets, trying to get a foothold into informal trade and other avenues of employment, rather than staying in the rural areas to farm.[32]

In addition to the increases in female numbers and recorded participation rates in the official labour force statistics, there is also evidence that the duration and intensity of women's workloads are increasing, both their agricultural contributions as farmers and their burdens of domestic/subsistence work. The latter are made heavier by absence of children at school; by water and fuel shortages, in view of desertification and deforestation and transport problems, exacerbated by increased distances to farms.

The energy crisis of fuel wood scarcity is itself having a devastating impact on women in Ghana and other countries, for fuel wood still remains the main available fuel for household consumption and has to be collected and transported by them, using their own physical energy.[33] Indeed transport of goods by female head loading is now also recognised as an important part of the female work burden in Ghana and elsewhere in the region. Estimates of up to 3.4 hrs a day have been calculated, much of it transport of agricultural produce, as well as water and fuel. Burdens of unpaid, unrecorded, subsistence work can be far heavier, in terms of duration and energy expenditure, than formal sector jobs, including as they frequently do, head loading and carrying of heavy weights and laborious food processing and preparation.

In the case of farming women's harder agricultural tasks are blamed not only on male absence, but also on population pressures, and on the increasingly degraded land and the loss of soil fertility; the introduction of cash crops controlled by males, the dispersal of kin groups, and wide ecological changes.[34] Tales told by individual women tell of fatigue, stress, sickness and strain, resulting from too heavy burdens of physical work.[35]

Meanwhile time use studies have recorded, at least in a few detailed instances, how time and energy are being stretched between different activities and roles. An important finding of many studies is that women's time and energy are becoming, or are already, stretched to breaking point, as they are increasingly consumed by occupational and domestic or subsistence tasks. What is more, reviews of African evidence and individual micro studies suggest that there is a growing gender imbalance in workloads, leaving mothers no time for rest or leisure enjoyed by male counterparts, a situation aggravated by the continuing male biases inherent in employment and agricultural policies and programs, including relative neglect by extension workers, lack of credit etc.[36]

A case in point is provided by the studies in North East Ghana carried out over two decades in the Bawku District from the seventies to the nineties by Whitehead (1996). These

have provided evidence of how women's agricultural work burdens have been markedly increasing over time. Women were observed to be both weeding men's grain crops, which they had not done before, and farming more on their own account.[37] In addition they were also earning more from small incomes off the farms. People were aware that changes had occurred and women were described as now working harder than men in farming activities and earning income. They were described as having increased the harvest, but of doing it to stave off impending starvation and as a response to stress. Whitehead (1996) cited informants as saying that,

> Women are doing more farming because of the hunger, they are forced to do it if we are not to starve.
>
> Fifteen years ago women weren't farming and there was enough food. Now even with women farming so much, the hunger is worrying them – because of poor yields.

Over time women's general contribution to the household economy appears to have become even more crucial and Whitehead (1996) noted significant changes taking place in interdependence between women and men, as women's production and services became more important to the immediate survival of the household. While a few women had found opportunities for economic independence and accumulation, the majority had increased work burdens and were becoming more and more responsible for aspects of the domestic budget and had themselves a reduced level of living.

The fate of most women is to combine different types of workloads throughout a 12 to 16 hour day. A number of recent small scale studies have indicated these multiple dimensions of women's work loads. In addition they have demonstrated the extent to which women's burdens are escalating, as they are reported to be growing throughout the region, in response to impoverishment and the need for cash, in increasingly monetized economies. These excessive burdens are noted to be having negative impacts on women's health and nutritional status.

One vivid example is a recent study in the Volta Region in Southern Ghana, designed to document women's health problems, and which inadvertently discovered that a great concern for women was the way in which their heavy workloads were detrimental to their own health, both psychic and somatic (Avotri and Walters 1999). The women complained of their unending multiple tasks, which had to be done to keep them and their families alive. They stressed the difference between their workloads and the men's. They had no rest; the men could rest. Many were coping alone without husbands or other relatives to help them.

Pressures, to earn needed cash, made them take on several different jobs. Their fatigue was aggravated by the heavy burdens of farm produce and water and wood, which they had to carry for long distances each day.

Another recent study from Ghana tells a similar story. This time it is about the impacts of women's multiple work loads on their own nutritional status in and around Accra. It also shows how several, simultaneous sets of economic activities (trading/farming/small businesses /salaried employment), in addition to onerous, energy consuming, domestic work, mean that women's working days stretch from 12 to 17 or more hours (Nti et al. 1999). All the women complained of general weakness and tiredness and body pains. Many suffered headaches and dizziness and waist pains were common. Meals were skipped because of lack of time to stop and eat and diets were poorer because of lack of time for food preparation and cooking. A quarter of the women studied were underweight and at risk. "The low Body Mass Index (BMI) could be attributed to too much energy expenditure and high nutrition depletion because of a heavy workload and low dietary intake." The authors concluded that the multiple roles of the women exerted a significant amount of physiological stress on them, which in turn affected their health. Moreover the long hours of work performed by the women resulted in generally low meal frequency, inadequate nutrient intake and poor nutrition, especially among the rural residents.

Is it any wonder then that 43% of pregnant women in the south are estimated to be malnourished and 65% in the north. And yet the connection between women's excess **energy expenditure** and nutritional status has often not been made, emphasis being rather put on energy consumption or inadequate diet! A useful exception is provided by Higgins and Alderman (1993), who used time allocation data to estimate the contribution of individual energy expenditure differentials to determining nutritional status. They stress that the role of energy expenditure in contributing to female nutrition is potentially more important in Ghana and the rest of Sub-Saharan Africa, than anywhere else in the world. This is so in view of the fact that African women tend to spend a relatively higher proportion of their time performing physically demanding tasks, with relatively less leisure time, due mainly to their central role in agricultural production and distribution and a lack of labour saving devices.

The authors used data from the 1987-88 Ghana Living Standards Survey (GLSS). They found that 72% of women worked outside the home and of these 21% reported working on at least two jobs in the previous seven days. This was in addition to a weekly average of more than 20 hours of labour in the home, which more than 95% had to do. Seventeen percent of women were undernourished, 2% severely so, especially rural farmers. The authors of the

study concluded that the demanding physical labour performed by Ghanaian women, especially in agriculture and possibly also in food processing and preparation has a significantly negative effect on their nutritional status. Moreover such nutritional impacts may affect the prospects for their children as well.

Clearly such connections also need to be made with maternal mortality and low birth weights, in the light of the heavy weights lifted and heavy work schedules undertaken by pregnant women.[38] Low birth weight babies have a lot to catch up, if they are not to remain under weight infants and toddlers.

These findings about women's stress and strain are corroborated by a recent global enquiry among the poor, undertaken for the World Bank (1999a), which has underlined the salience of time poverty, physical weakness, lack of energy and powerlessness, suffered by women in many places, as their work loads grow and scarcity of time and energy become problematic for those struggling at the margin.

The Productive/Reproductive Squeeze

The link between overall household material resources and child nutrition is distinctively weak in Africa, not only in Ghana, far weaker than in some other regions.[39] This fact directs attention to the need to examine intra-household resource management and allocations, including time use and specifically the roles and relationships of women, as mothers of infants and their capacity to respond to the nursing and weaning needs of their offspring, in the face of their other labour demands.

In actual fact infant nutrition in African contexts has frequently been discussed without attention to the familial systems of roles and relationships of kinship and affinity and domestic organization within which it is embedded.[40] And while a considerable amount of analysis has been attempted, examining women's formal, recorded employment and fertility, relatively little has yet been done to examine women's workloads and child nutrition or child development. A major stumbling block still remains the poor measurement and recording of women's work.

Several decades ago and before Boserup's (1970) seminal work on the subject of women's changing roles in the context of development, R. Levine (1966) had forecast that changes in African economies and women's economic roles might be expected to change their behaviour in family roles. He observed from his fieldwork among the Gusii of Kenya that it seemed as if her children become the ultimate victims of their mother's excessive work burdens.[41]

Whitehead (1996) has recently summarized the conflict experienced by women in the Bawku area:

> In the six research communities the effect is almost certainly a reproduction production squeeze for some individuals. Women's high reproductive burden, in terms of the toll on their health and the amount of labour time and physical energy pregnancy and child rearing consume, has not reduced, while extra demands are being made in the productive sphere[42]

A variety of small studies from different time periods and country locations have indicated the potentially critical impacts on breast feeding and supplementation patterns; of the type (timing/location) of work load (paid or unpaid) born by mothers; the presence or absence of supportive others (partner/kin) and the modes of delegation of infant care.[43] Clearly the nature of the familial contexts within which mother - infant dyads are located is crucial. In this case, of importance are the flexibility of workloads and the presence of supportive kin or others to assist with cooking, water fetching etc. Several studies in the region have documented positive impacts on children's nutritional status of help and support of various kinds given to their mothers.[44]

The Unclear Family: Mothers and Infants Alone

Strategies for coping with heavy work loads, simultaneously with child care, included relying on parents and child labour, synchronizing tasks and putting children in day care facilities, and for the wealthier few, hiring help (Nti et al. 1999). But there is widespread evidence that such supports are breaking down and unavailable.

Changes have occurred over several decades in Ghana, affecting the capacity of mothers to obtain customary forms of help from their families. These changes have been brought about by migration of both women and men;[45] by education, employment, unemployment and environmental degradation. They have involved the dispersal of kin and the breakdown of the supports which they provided for child care and work sharing to hard pressed mothers; now only 15 to 34 percent of mothers in different regions in the country delegate child care to kin while they work (GDHS 1998).

At the same time that kin support is dwindling there is evidence of the increasing fragility and segregation of conjugal roles and deprivation of marital support, as witnessed by escalating numbers of households maintained/headed by women alone following conjugal separation, divorce and lack of marriage. In addition the persistent multiple responsibilities of

male polygynists, or men in multiple unions, means that women have to shoulder a greater burden of responsibility for their own children and have less opportunity to rely on the male than in monogamous systems with stable unions.

The proportion of infants living with mothers and no fathers is very high. Data from the GDHS 1998 showed that as many as 36% of babies (under 2 year olds) were with their mothers alone (father alive but not present) (29% of toddlers 3-5). Relevant in this regard would be *information on proximity of or co-residence of kin but that is lacking*. Evidence on stunting and mother's marital status shows that having a father, married to the mother, matters for babies in Ghana (Table 4).

Clearly, evidence on child fostering and the extent of fathers' (and mothers') separation and absence, during children's crucial periods of development also need study in this regard, as well as factors affecting maternal /paternal /other caretakers' time available or allocated for the time consuming job of child weaning and possible impacts of women's increasing burdens of agricultural and subsistence work.

Table 4: Percent of Children Stunted, by Mother's Marital Status

Marital status	% stunted
Monogamous marriage	30
Polygamous marriage	34
Not in union	41

Cited from Desai (1992). Data Source GDHS 1988.

Infant Deprivation and Vulnerability

The signs are overwhelming from Ghana and elsewhere in the region. Babies entitlements to their mothers' breast and appropriate weaning foods, fed to them at frequent intervals and at the right time have dwindled precipitously, threatening their growth and well being, not only when infants but in later life. Mothers' jobs and subsistence /domestic work compete with babies for mothers' time, energy and attention. Big brothers and sisters are not there to hold them up in unhygienic surroundings. They are mainly at school. Cousins, aunts and grandmothers are often far away. Fathers are frequently absent and their support to breast feeding mothers missing.

What of crèches, where a nursling could be adequately tended and fed expressed breast milk (according to lactation management hand books and instructions)? Even powdered milk

for babies, if available, is beyond the range of the majority. There is evidence of demand by mothers for crèches to put their babies in, in rural as well as urban areas, farmers and traders as well as employees.

It is not surprising that there is comparative evidence from many quarters linking both kin absence and fragility of conjugal bonds and parental absence with suffering of infants and young children (as measured by survival rates, health and nutritional status).[46] As conjugal relations grow more fragile and divorce increases, in contexts of disintegration of kin group solidarities, we could surmise there will be increasing proportions of children who are not the focus or pride and joy of the adults who are caring for them, with consequent ill effects on their nutritional status and well-being.

Significantly higher educated women are not immune to these dilemmas of role conflict and stress, as indicated by evidence of increases over time in long term nutritional deprivation of offspring (stunting) and of a propensity to enter or remain in polygynous marriages. These findings run counter to stereotypical ideas of educated women necessarily being able to provide well for their children and having modern, monogamous marriages! In reality serious role conflicts, strains and stresses, regarding motherhood and work, had already been documented in studies of nurses and teachers in Ghana in the decade of the seventies and such conflicts were observed to precipitate contraceptive and demographic innovation among the educated (Oppong 1977; Oppong and Abu 1987).

Concluding Commentary

Systemic Analysis

Literature from several disciplines has tried to put hunger human need for food in a larger context of the food system. Such systemic approaches focus on the complex linkages among the production, distribution and consumption of food (Millman and Kates 1995: 4). This involves moving beyond a single disciplinary perspective in which hunger is viewed as an agricultural problem or a nutritional problem or an exchange problem.

In Africa a classic, now historical, example of a systemic approach to analysis of seasonal and chronic hunger was provided by Audrey Richard's (1939) study of Bemba food and nutrition. This put the local food system in the wider national and international context of colonial, economic and labour policies. These among other things made men migrate to mines causing labour shortages for food production and involved those left at home in a cycle of energy deficit, female over work and deprivation and malnutrition. Thus the food shortages were put squarely within the political and economic systems, which caused the male labour

shortages, while failing to develop other opportunities for income earning or modes of attracting food from elsewhere.

Applied Research

Clearly the study of infant nutrition at the present time needs to be put, not only within the context of maternal modes of infant feeding and rearing, in families and communities, nor only in the context of individual mother's role conflicts and time and energy stresses, but it also needs to be situated within consideration of the political economy, at local, national and international levels.

Theoretical approaches to child development such as that promoted by the Whitings and their students in which the child's environment is shaped primarily by the maintenance system of the culture, including parental employment, settlement patterns and maternal workload, appear to be still useful as a basis for explaining what is happening.[47]

However documentation of these aspects of infant feeding and maternal care, both the flexibility and adaptation of work schedules (paid and unpaid, inside and outside the home, duration and intensity) or the kinds of family support provided, have not been incorporated into the design of the surveys currently providing the major sources of data on infant nutritional status, sicknesses and survival. Thus unfortunately the available large scale surveys, in particular the GDHS have so far had limited capacity to trace such a possible link between dimensions of mother's work loads and breast feeding and weaning patterns. Accordingly it is time in the African context to promote a new round of child focused studies, in which the objective is not merely to measure and predict outcomes in terms of quantities of offspring and tempo of child bearing, or access to health services, important though these clearly are, but to also document and promote understanding of the processes whereby infants are provided with or stripped of their basic entitlements to mother's milk, loving care, and adequate weaning practices.

Work on women's allocation of time to their different roles by Popkin and associates provides an important model of how to proceed with field studies on these questions.[48] The idea of maternal under-investment in infants is also obviously a relevant one for further exploration, as are the ideas of paternal and kin and community investment in infant growth and development.[49]

There is thus need to promote field studies which examine the simultaneous productive and reproductive roles of women, including impacts of heavy work loads on maternal mortality and morbidity, low birth weights, weaning practices etc. and on the other hand

impacts of women's reproductive activities and constraints on their farming work. There is a lack of integrated data sets which examine productive and reproductive activities and responsibilities simultaneously for females or males, data sets are typically gendered (more on reproduction from women and more on production from men), and yet the policy implications of such simultaneity are enormous, a fact recently noted in FAO work on population issues.

Policy Relevance

Ghana aspires to be a middle income country in the near future, yet it exhibits the serious features of infant and child hunger and under-nutrition discussed. Moreover there are signs of deteriorating nutritional status among some categories of children. Various policy and program solutions have been proposed over time, including new methods of teaching mothers in health education programs; provision of free supplementary food items; setting up of clinical nutrition units and establishment of baby-friendly hospital wards (eg. Commey et al. 1985).

However in the past too little attention appears to have been focused on imbalances in responsibilities between women and men in child bearing and rearing, and maintenance and how these may affect child development outcomes.[50] Meanwhile Women in Development (WID) and Gender and Development (GAD) initiatives have often focused on enhancing the productive roles of women. The question posed is whether WID and GAD lobbies focus enough attention on the problem of the productive /reproductive squeeze. In this regard a Ghanaian man complained that the Beijing Conference did not raise the subject of Maternity Leave and that national women's meetings fail to discuss this issue, of how working women can feed their babies.[51]

In the case of educational strategies, there is already evidence that while nutritionists try to reach individual mothers with information about proper infant feeding, mothers themselves know that infant nutrition problems are embedded in gender and family relations and that in situations of labour migration and impoverishment, women have to rely on support from others. This not only means that health education should be addressed to husbands, grandmothers and mothers-in-law as well as mothers (cf. Whyte and Kariuki 1991). It also means that education is not enough.

The findings of Higgins and Alderman (1993) implied that introduction of labour saving devices would have a direct impact on nutrition, similar to an increase in food consumption. What is more, they noted that in view of the energy deficit situations of mothers and their children, public works projects involving women's labour may be quite counter-productive, in

particular when they are specifically designed to respond to chronic or acute food shortages. This is a very important policy pointer, especially in view of the extent to which public works have been viewed as a panacea for hunger.

Ultimate Goals

Accordingly this paper has had two main goals: first to stimulate further discussion and the exchange of ideas and information among interested scholars and practitioners, and secondly to serve as a catalyst to help promote the design and development of more interdisciplinary, gender sensitive, family based, policy oriented, applied research, focusing on infants' nutritional status and child development in Ghana. For if crucial causal mechanisms affecting infants' nutritional statuses and entitlements are not clearly identified, made known, and addressed, it will be difficult, if not impossible, to put in place appropriate policies and design relevant or effective programs. If the problem is not identified how can it be addressed?[52] As a meeting on infant malnutrition at the Centre for Social Policy Studies, University of Ghana, concluded (1998), Ghana's numerous visions for this new millennium cannot become a reality, if the power of good nutrition for infants is under-rated and under-achieved.

References

Abu K., 1994. Family Planning and Welfare in Northern Ghana. In Adepoju and Oppong (eds.) London: James Currey.

Adeokun, L.A., 1983. Marital Sexuality and Birth Spacing among the Yoruba. In C. Oppong (ed.).

Adepoju A. and C. Oppong, 1994. *Gender, Work and Population in Sub Saharan Africa*. London: James Currey.

Ahiadike C., 2000. Breast feeding, Diarrhoea and Sanitation as Components of Infant and Child Health: a study of large scale survey data from Ghana and Nigeria. *Journal of Biosocial Science* 32: 47-61.

Anker, R., 1994. Measuring Women's Participation in the African Labour Force. In Adepoju and Oppong (eds.).

Ardayfio-Schandorf, E., 1993. Household Energy Supply and Women's Work in Ghana. In J.H. Momsen and V. Kinnaird (eds.), *Different Places, Different Voices: Gender and Development in Africa Asia and Latin America*. London: Routledge. Pp. 15-29.

Asenso-Okyere, W.K., F.A. Asante and M. Nube, 1997. Understanding the Health and Nutritional Status of Children in Ghana. *Agricultural Economics* 17: 59-74.

Avotri, J. Y. and V. Walters, 1999. "You just look at our work and see if you have any freedom on earth"; Ghanaian women's accounts of their work and health. *Social Science and Medicine* 48: 1123-33.

Bantje, H., 1995. 'Women's Workload and Reproductive Stress. In D.F. Bryceson (ed.), *Women Wielding the Hoe. Lessons from rural Africa for feminist theory and development practice*. Cross-Cultural Perspectives on Women. Oxford: Berg Publishers. Pp.111-30.

Basu, A.M. and K. Basu, 1991. Women's Economic Roles and Child Survival: the case of India. *Health Transition Review* 1.1: 83-103.

Basu, A., 1995. Anthropological Demography in the Understanding of Child mortality: the underinvestment framework and some misapplications. *The Continuing Demographic Transition.* Canberra: J.C. Caldwell Seminar.

Begin, F., E.A. Fringillo Jr. and H. Delisle, 1998. Caregiver Behaviours and Resources Influence Child Height for Age in Rural Chad. *Community and International Nutrition.* American Society for Nutritional Sciences

Benneh, G. 1990. Population Growth and Development in Ghana. Population Impact project (PIP Ghana)

Bernstein, H., B. Crow, M. Mackintosh and C. Martin (eds.) 1990. The Food Question: Profits Versus People. London: Earthscan Publications Ltd.

Bledsoe, C., 1989. Differential Care of Children of Previous Unions Within Mende households in Sierra Leone. In: Caldwell et al. (eds.).

Bohdal, M., N.E. Gibbs and W.K. Simmons, 1968. Nutrition Survey and Campaign Against Malnutrition in Kenya. Mimeographed report to the Ministry of Health of Kenya on the 1964-1968 WHO/FAO UNICEF assisted project.

Brakohiapa, L. A., 1999. On Factors Affecting Food Intake and Nutritional Status of Infants in some selected communities in the Greater Accra Region of Ghana. PhD.Thesis, University of Ghana.

Brakohiapa, L.A., M. A. Armar-Klemesu and E. Asibey Berko, 1999. The Effect of Burping on Breast Milk Intake of Infants. Paper presented at the Twentieth African Health Sciences Congress, Legon, April 19-23.

Brydon, L., 1983. Avatime Women and Men, 1900-80. In C. Oppong (ed.).

Caldwell, J. et al. (eds.) 1989. *What We Know about Health Transition.* Canberra: Australian National University.

Carvajal, M. and P. Burgess, 1978. Socio-Economic Determinants of Fetal and Child Deaths in Latin America: A Comparative Study of Bogota, Caracas and Rio de Janeiro. *Social Science and Medicine* 12: 89-98.

Cecelski, E., 1987. Energy and Rural Women's Work: Crisis, Response and Policy Alternatives. *International Labour Review* 126.1 (January-February).

Chen, L.C., E. Huq, and S. D'Souza, 1980. A Study of Sex-Biased Behaviour in the Intra Family Allocation of Food and the Utilisation of Health Care Services in Rural Bangladesh. International Centre for Diarrhoea Disease Research, Bangladesh, and Department of Population Sciences, Harvard School of Public Health.

Clark, G. 1997. Nursing Mother Work in Ghana: Power and Frustration in Akan Market Women's Lives. Indiana University (typescript).

Cleland, J.G. and J. K. van Ginneken, 1988. Maternal Education and Child Survival in Developing Countries: the search for pathways of Influence. *Social Science and Medicine* 27.12.

Commey, J.O.O., G.A.S. Amuasi, J.E. Richardson and A. Asamoah-Baah, 1985. The Nutritional Status and Feeding Practices among sick urban pre-school children admitted to a major hospital in Accra, Ghana. *Annals of Tropical Paediatrics* 5: 131-36.

Crawford. L. and E. Thorbecke, 1980. The Analysis of Food Poverty, An Illustration from Kenya. *Pakistan Development Review* 19.

Davey, P.L.H., 1962a. Report of the National Nutrition Survey. Accra: Food and Nutrition Board (mimeograph).

_____ 1962b A Summary of the Conclusions and Recommendations of the National Surveys of 1961 and 1962 Accra: Food and Nutrition Board (mimeograph).

Davis, P., 1997. Time Allocation and Infant Feeding Pattern: women's work in the informal sector in Kampala, Uganda. In: *Exclusive breastfeeding promotion: a summary of findings from EPB's applied research program (1992-1996,* Expanded Promotion of Breastfeeding Program. Washington. D.C.: Well start International, Expanded Promotion of Breastfeeding Program. Pp. 26-9.

DeRose, L., 1995. Women's Work and Infant Feeding in Ghana: Implications for Fertility and Children's Health. Ph. D. Dissertation, Brown University.

Den Hartog, A.P., 1973. Unequal Distribution of Food within the Household. FAO Newsletter 10.4 (October- December).

Morely, D., J. Bickness and M. Woodland, 1968. Factors influencing the growth and nutritional status of infants and young children in a Nigerian village. *Transactions, Royal Society, Tropical Medical Hygiene* 62: 164-99.

Nerlove S.B. 1974. Women's Workload and Infant feeding Practices: a relationship with demographic Implications. *Ethnology* 13.2.

Newman, L.F. (ed.), 1995. *Hunger in History: Food Shortage, Poverty and Deprivation.* Oxford: Basil Blackwell.

Nicol, B M., 1959. The Calorie Requirements of Nigerian Peasant Farmers. *British Journal of Nutrition* 13: 293-306.

Nti, C.A., G. Gogo and E. Biscoff, 1999. Exclusive Breastfeeding Practices among Working Mothers in Accra, Ghana: Problems and Coping Strategies. *Journal of Asian Regional Association for Home Economics* 6.2.

Nti, C.A and W.A Plahar, 1995. Chemical and Biological Characteristics of a West African Weaning Food supplemented with cowpea (Vigna unguiculata). *Plant Foods for Human Nutrition* 48: 45-54.

Nti. C.A., R. Owusu and A. Aryeetey, 1999. Growth Patterns of Breast Fed Infants in Accra, Ghana. *Journal of Asian Regional Association for Home Economics* 6.1: 46-50.

Nti, C.A., D. Inkumsah and G. Fleischer, 1999. Influence of Women's Workload on their Nutritional Status in Selected Communities in Ghana. *Journal of Consumer Studies and Home Economics* 23 (June).

_____ 1999. Mothers in Accra, Ghana: Problems and Coping Strategies. *Journal of Asian Regional Association for Home Economics* 6.2: 77-82.

Obermeyer, C.M. and S. Castle, 1997. Back to nature? Historical and Cross Cultural Perspectives on Barriers to Optimal Breastfeeding. *Medical Anthropology* 17: 39-63.

Oppong, C., 1977. The Crumbling of High Fertility Supports. In: J.C. Caldwell (ed.), *The Persistence of High Fertility: Population Prospects in the Third World.* Family and Fertility Change Series no.1. Australian National University Press. Pp. 331-60.

_____ 1980. A Synopsis of Seven Roles and Statuses of Women: An outline of a conceptual and methodological approach. World Employment Program Working Paper No. 94.

_____ 1991. The Relationship Between Women's Work and Demographic Behaviour: Research Evidence from West Africa. World Employment Programme Working Paper No. 175.

_____ 1997. Smiling Infants or Crying Babies: taking reproductive labour and maternal strain into account in sustainable development frameworks, policies and plans. Paper presented at a conference on Gender Differentials in Work Intensity, UEA, Norwich UK, and subsequently at the Watson Institute, Brown University. Reproduced as no. 4 in the Occasional Research Paper Series 2000. Legon: Institute of African Studies.

Oppong, C., (ed.), 1983. *Female and Male in West Africa.* London: George Allen and Unwin.

Oppong, C., with K. Abu, 1985. *A Handbook for Data Collection and Analysis on Seven Roles and Statuses of Women.* Geneva: ILO.

Oppong, C. and K. Abu, 1987. *Seven Roles of Women: Impacts of Education, Migration and Employment on Ghanaian Mothers.* Women, Work and Development Series No. 13. Geneva: ILO.

Page, H.J. and R.J. Lesthaghe (eds.), 1981. *Child Spacing in Tropical Africa – Tradition and Change.* London: Academic Press.

Panterbrick, C., 1989. Motherhood and Subsistence Work – the Tamang of rural Nepal. *Human Ecology* 17.2: 205-27.

Popkin, B.M., 1980. Time Allocation of the Mother and Child Nutrition. *Ecology of Food and Nutrition* 9: 1-14

Popkin, B.M. and F.S. Solon, 1976. Income, Time, the Working Mother and Child Nutrition. *Journal of Tropical Pediatrics, Environment and Child Health* 22: 156 - 66.

Popkin, B.M., J.S. Akin, W. Flieger and E.L.Wong, 1989. The Effects of Women's Work on Breastfeeding in the Philippines, 1973-1983. In: J. Leslie and M. Paolisso (eds.) pp. 85-112.

Popkin, B.M. and R. M. Doan, 1989. Women's Roles, Time Allocation and Health. In: J. Caldwell et al. (eds.).

Poskitt, E.M.E., T.J. Cole and R.G. Whitehead, 1999. Less Diarrhoea but No Change in Growth: 15 years' data from three Gambian villages. *Archives of Diseases of Childhood* 80.2: 115-9 (Feb.).

Desai, S., 1992. Children at Risk: The role of family structure in Latin America and West Africa. *Population and Development Review* 18.4: 689-717 (December).

Dettwyler, K.A., 1987, Breast Feeding and Weaning in Mali: Cultural Context and Hard Data. *Social Science and Medicine* 24.8: 633-44.

Dinan, C., 1983. Sugar Daddies and Gold Diggers: the White Collar Single Womanin Accra. In: C. Oppong (ed.).

Doan, R.M. and B.M.Popkin, 1993. Women's work and infant care in the Philippines. *Social Science and Medicine* 36.3 (Feb.): 297-304.

Entwistle, B., F. Zhai, J. Bouma and B. Popkin, 1995. The multidimensional character of women's work in contemporary China. Paper presented at the Annual Meeting of the Population Association of America, San Francisco, California.

Gaisie, S., 1981. Child Spacing Patterns and Fertility Differentials in Ghana. In: H. Page and R. Lesthaeghe (eds.), *Child Spacing in Tropical Africa*. Academic Press.

Ghana Statistical Office, 1997. *Trends in demographic, family planning and health indicators in Ghana 1960-93*. Accra.

Ghana Statistical Service and Macro International, 1995a. Nutrition of Infants and Young Children in Ghana 1993. Africa Nutrition Chart Books. Calverton, Maryland, USA: Macro International Inc.

_____ 1995b. Nutrition and Health Status of Infants and Young Children in Ghana. Findings from the 1993 Ghana Demographic and Health Survey. Calverton MD: Macro International Inc.

Ghana Statistical Service and Macro International, 1999. Ghana Demographic and Health Survey 1998. Accra.

Goldschmidt, Clermont L., 1990. Economic Measurement of Non-market Household Activities: is it useful and feasible? *International Labour Review*.

Goody, J. R., 1956. *The Social Organization of the Lowilli* London: H.M.S.O.

Greiner, T., 1990 Breast Feeding and Working Women: Thinking Strategically. Background Paper for a UNICEF Workshop on Working Women and Breastfeeding, Brasilia May 26-June 1 (Uppsala University).

Gullestad, M., 1998. Studying the Self Evident. *Anthropological Newsletter* (November).

Harkness, S., 1998. Time for Families. *Anthropology Newsletter* 39.8. (November).

Higgins, P.A. and H. Alderman, 1993. Labor and Women's Nutrition, A Study of Energy Expenditure, Fertility and Nutritional Status. Cornell Food and Nutrition Policy Program Working Paper 37.

Hill, A.G., 1985. *Population, Health and Nutrition in the Sahel: Issues in the Welfare of Selected West African Communities*. London: Routledge and Kegan Paul.

Institute for Social Statistical and Economic Research, 1999. Situational Analysis of Children in Ghana. Accra: University of Ghana.

Joekes, S., 1987. Women's Work and Social Support for Child Care in the Third World. Washington: ICRW.

Levy, V., J. Strauss, D. Thomas and P. de Vreyer, 1995. The Impact of the Quality of health care on Children's Nutrition and Survival in Ghana. LSMS Working Paper No. 106. Washington DC: The World Bank.

Leslie, J. and M. Paolisso. (eds.). 1989. *Women, Work,and Child Welfare in the Third World*. AAAS Selected Symposium 110. Boulder, Colorado: Westview Press.

Levine, R. et al., 1994. *Child Care and Culture, Lessons from Africa*. Cambridge University Press.

Levine, R.A., 1966. Sex Roles and Economic Change. *Ethnology* 5.2 186-93.

MacCormack, C.P. (ed.) 1982. *Ethnography of Fertility and Birth*. Academic Press.

Mbilinyi, M. 1990. Structural Adjustment, Agribusiness and Rural Women. In: Bernstein et al. (eds.).

McFie, J., 1967. Nutrient Intakes of Urban Dwellers in Lagos, Nigeria. *British Journal of Nutrition* 21: 257-68.

McGuire, J. and B.M. Popkin, 1990. Beating the Zero Sum Game:Women and Nutrition in the Third World. In: Women and Nutrition. ACC/scan Symposium Report, Nutrition Policy Discussion Paper no. 6. Geneva: UN.

Millman, S. and R.W. Kates, 1995. Towards Understanding Hunger. In: Newman (ed.).

Raphael, Dana and Flora Davis. 1985. *Only Mothers Know*. Washington D.C.: The Human Lactation Center.

Reynolds, White S. and P. Wanjiru Kariuki, 1991. Malnutrition and Gender Relations in Western Kenya. *Health Transition Review* 1.2.

Richards, A., 1939. *Land Labour and Diet in Northern Rhodesia: An Economic Study of the Bemba Tribe*. London and New York: Oxford University Press.

Ritchie, J.A.S., 1963. Teaching Better Nutrition. *FAO Nutritional Studies* 6. Rome: FAO.

Schofield, S., 1975. *Village Nutrition Studies,An Annotated Bibliography*. University of Sussex: Institute of Development Studies.

Sen, A.K., 1976. Females as Failures of Exchange Entitlements. *Economic and Political Weekly* 11: 31-33 (Special Number).

_____ 1977. Starvation and Exchange Entitlements: a general approach and its application to the great Bengal famine. *Cambridge Journal of Economics* 1: 33-59.

_____ 1981a. *Poverty and Famines: An essay on Entitlement and Deprivation*. Oxford: Clarendon Press and New York: Oxford University Press.

_____ 1981b. Ingredients of Famine Analysis: Availability and Entitlements. *Quarterly Journal of Economics* 95: 433-64.

_____ 1984. *Resources Values and Development*. Cambridge, Mass.: Harvard University Press

Senauer, B., 1990. The Impact of the Value of Women's Time on Food and Nutrition in Persistent Inequalities. In: I. Tinker (ed.) *Women in World Development*. Oxford University Press.

Sommerfelt, A.E. and M.K. Stewart, 1994. Children's Nutritional Status. Demographic and Health Surveys Comparative Studies No.12. Calverton, Maryland: Macro International Inc.

Spio, K., 1997. The Role of Women in Rural Society. *Journal of Rural Development* 16.3: 497- 513.

Spring, Rice M., 1939. Working Class Wives: Their Health and Condition. Harmondsworth: Penguin.

Standing, G., 1989. Global Feminization through Flexible Labour. *World Development* 17.7: 1077-1095.

Stuart-Macadam, P. and K.A. Dettwyler (eds.) 1995. *Breastfeeding: Biocultural Perspectives*. New York: Aldine de Gruyter.

Thomson, B.P., 1954. *Two Studies in African Nutrition*. Rhodes Livingstone Papers no. 24. Lusaka.

Tzannatos, Z., 1999. Women and Labour Market Changes in the Global Economy: Growth Helps, Inequalities Hurt and Public Policy Matters. *World Development* 27.3: 551-69.

United Nations, 1985. Socio-Economic Differentials in Child Mortality in Developing Countries. New York.

United Nations Secretariat. 1992. Population and Women: A Review of Issues and Trends. Background paper for the International Conference on Population and Development 1994. Expert Group meeting on Population and Women, Gaborone 22-6 ESD/P/ICPD 1994/EG./3 June.

UNICEF, 1987. Adjustment Policies and Programmes to protect Children and other Vulnerable Groups in Ghana. In A. Cornia et al. (eds.) *Adjustment with a Human Face: Ten Country Case Studies*. Oxford University Press.

UNICEF, 1998. The State of the World's Children. Report. New York.

UNICEF and Government of Ghana, 1990. *Children and Women of Ghana: a Situational Analysis*. Accra.

University of Ibadan. 1970. Technical Report on the Nutrition Survey, Oje District Ibadan Town, Nigeria. Food Science and Applied Nutrition Unit, University of Ibadan.

Van Esterik P., 1990. Women's Work and Breast Feeding. Background paper prepared for UNICEF for the Interagency Group for Action on Breastfeeding. Geneva (June).

Van Esterik, P. and T. Greiner. 1981. Breast Feeding and Women's Work Constraints and Opportunities. *Studies in Family Planning* 12.4. (April).

Wandel, M. and G. Homboe-Ottesen, 1992. Maternal Work, Child Feeding and Nutrition in rural Tanzania. *Food and Nutrition Bulletin* 14.1.

Whiting, B. (ed.) 1963. *Six Cultures; Studies of Child Rearing*. New York: Wiley.

Whitehead, A., 1996. Poverty in North East Ghana. Manuscript Report to ESCOR ODA, London.

World Bank, 1999a. Global Synthesis; Consultations with the Poor. Poverty Group, World Bank, Washington (draft for discussion).

_____ 1999b. Consultations with the Poor; Ghana Country Synthesis. Report (commissioned by World Bank, typescript).
_____ 2000. Socio-Economic Differences in Health, Nutrition and Population in Ghana. HNP Poverty Thematic Group, World Bank, Washington.

Notes

[1] This paper was written during the author's tenure of a Fellowship at the Netherlands Institute for Advanced Study (NIAS) 2000-2001. A version was presented for discussion to a Ghana Studies Seminar at the African Studies Centre, University of Leiden. It takes up a theme at the country level, discussed more generally in Oppong (1997: 2000). The author is working on a longer study which takes up the themes discussed, *Gender, Hunger and Development.*

[2] Benneh (1990:8) noted the continued high levels of malnutrition in a period of rising production of agricultural products. UNICEF (1987) documented the dimensions of the problem in the decade of the eighties in Adjustment with a Human Face.

[3] ISSER (1999), citing evidence from the Ministry of Health of the mid decade.

[4] Various studies and reviews have called attention to the importance of several aspects of this theme. See for example Hill (ed.) (1985); Leslie and Paolisso (eds) (1989); Basu and Basu (1991); Oppong (1991) and Joekes (1987) and Van Esterik (1990). We do not address here the vast literature on maternal education and child survival eg. Cleland and van Ginneken. (1988). A UN (1992) review of evidence noted that women's work may lead to diversion of women's time and attention away from home, which may have a negative impact on children's welfare – and that this was an issue which had received relatively little attention, particularly in developing country settings.

[5] Recently Macro International, which together with national statistical offices carries out the Demographic and Health Surveys, has promoted two micro ethnographic studies of mother child interactions and infant feeding in Mali and Ghana. These could serve as models of how to proceed.

[6] See in the article by Agyei-Mensah in this issue.

[7] Sommerfelt and Stewart (1994) covered all DHS surveys that collected data on nutritional status. Because the DHS samples are nationally representative in Sub Saharan Africa (except for Ondo State Nigeria) population based estimates of the degree of under-nutrition among children in each of the surveyed countries can be estimated. Moreover the size of the samples is such that differentials in nutritional status can be examined according to several demographic, socio-economic and some health related characteristics. The number of respondents in each survey ranges from 3,000 to 9,000. The number of children aged 3-35 months whose anthropometric measurements were analysed ranged from 571 to 2,523. Anthropometry was included in the studies in the following Sub Saharan African countries in the surveys in 1985-1990: 1987 Burundi; Ghana 1988; Mali 1987; Ondo State Nigeria 1986/7); Senegal 1986; Togo 1988; Uganda 1988/9; Zimbabwe 1988/9.Three indices were used: height for age, which reflects a child's stature in relation to his or her age. A low score is evidence of chronic under nutrition in which past deficiencies have resulted in a short stature - it is referred to as stunting. The weight for age score reflects a child's total body mass and a low score means the child is either short or thin. Children whose weight for age score is too low are called underweight. The weight for height score indicates how thin the child is and a low score reflects acute problems and is termed wasting.

[8] Levy et al. (1995) provide an example of an analysis which tries to link children's nutritional status with access to health care, arguing that in rural areas increased availability of birth services and other related child programs would significantly improve ... weight for height in rural areas.

[9] Nigeria is another case in point. Its rank is sixth but its level of malnutrition is Very High- the most serious category of all.

[10] Eg Clark (1997) on the difficulty even now for a man to assert fatherhood, by naming the baby at the naming ceremony, without making at least a symbolic presentation of cloth and of supplies or funds for the mother's rest period after childbirth.

[11] See Gaisie (1981) on the differences in postpartum abstinence customs in different culture areas. He cites for example Goody J. (1956: 47) on the Lowiili who regard sexual relations during this period as an impediment to the flow of milk and satisfactory development of the infant.

[12] Thus Raphael (1985: xvi) found on the basis of a range of ethnographic studies that, "To understand the status of breastfeeding today we must see it in a broader context – and that means looking at the way it meshes or does not with the needs and life goals of the mother and her family."

[13] Contrasting patterns are found in different populations and sub groups. These changes over time have been well documented and linked to levels of birth spacing, fertility and mortality etc. Obermeyer and Castle (1997) review some of the findings.

[14] Even these figures show a huge rise from the earlier surveys, indicating either a rapid change in behaviour following lactation campaigns or alterations in the way data had been collected or changing availability and affordability of supplements. It should be noted that there has been concern for half a century or more to improve the nutritional content of weaning foods in Ghana. The word *kwashiorkor* used by medical staff to describe infant malnutrition was adopted (from the Ga in Accra) and the Ministry of Health and Social Welfare has had campaigns since the 1950s advocating inclusion of local proteins in infants' porridge.

[15] Their fertility has been well documented for around two decades, but much of their invaluable work is still not measured adequately or recorded in labour statistics or demographic surveys. There is increasing pressure to do so and methods to use. See for example the work of Goldschmidt Clermont (1990; 1994) and Anker (1994). Clark (1997) has noted the close link between production (trade) and reproduction for the Akan nursing mother.

[16] Comparative evidence from ethnographies supports the hypothesis that early supplementation is associated with the size of mothers' contributions to subsistence production (Nerlove 1974).

[17] Analysis of the 1988 GDHS did show clearly that birth spacing remains an important coping mechanism for mothers, helping them to combine economic activity of various kinds and infant feeding and care (DeRose 1995). The analysis indicated that women working for wages spaced their births further apart and were less likely to have more than one small child at a time. Women in the informal sector had longer birth intervals than those classified as not working. Breastfeeding was shorter in duration and supplementation occurred earlier among working mothers.
See also Abu's (1994) findings among Frafra (Tallensi) and Dagomba women in Tamale regarding the purpose of extended birth spacing.

[18] An important finding of De Rose's study was that the presence of another woman in the household had a positive association with duration of breastfeeding.

[19] Only a small minority of women work in the formal sector and still try to feed their babies at work, eg. teachers who take their infants to the classroom. De Rose's analysis showed that work that separated mother and baby had a negative effect on breastfeeding.

[20] See the work of Bartle; Dinan; Van der Geest from the sixties and seventies.

[21] Eg., see Ahiadike (2000) using data from Ghana and Nigeria. However evidence from the Gambia has recently demonstrated that simply diminishing the incidence of diarrhoea does not necessarily improve nutrition levels. See the work on diarrhoea of Poskitt et al. (1999) on the Gambia.

[22] eg Nti and Plahar (1995) on use of cowpeas or the development of Quality Protein Maize.

[23] See the work of Brakohiapa (1999) and Brakohiapa Annar Klemesu and Asibey Berko (1999) on the effects of facilitating babies burping to allow escape of gas and more effective intake of milk.

[24] "Ownership of food is one of the most primitive property rights and in each society there are rules governing this right. The entitlement approach concentrates on each person's entitlements to commodity bundles including food, and views starvation as resulting from a failure to be entitled to any bundle with enough food" (Sen 1984:453).

[25] He examined the power of the family to command food in a series of publications, concentrating in particular on famines and starvation. See Sen (1976, 1977, 1981 a and b).

[26] He cited evidence from Ritchie (1963) on mining families in the UK and US; also Spring Rice (1939).

[27] He cites as evidence surveys (see Den Hartog 1973; Schofield 1975).

[28] On Africa he cites the works of Thomson 1954, Nicol 1959, Davey 1962a and b; McFie 1967, Bohdal Gibbs and Simmons 1968; University of Ibadan 1970 and Crawford and Thorbecke 1980.

[29] The detailed studies he was able to quote from at length included studies of rural Bangladesh by Chen, Huq and D'Souza (1980).
[30] See Tzannatos (1999) using ILO data bases stretching over several decades.
[31] Cited from Spio (1997) based on IFAD (1992).
[32] There is demographic evidence that sex ratios in rural areas have been skewed towards females for some time.
[33] See Cecelski (1987) on the general crisis of fuel scarcity and Ardayfio-Schaandorf (1993) on a series of small community studies. Note that wood as such or charcoal made from it is even rising as a proportion of fuel used in households.
[34] As Bantje (1995) stresses, since all agricultural work requires a high level of physical effort distinctions are not easily drawn between heavy work and work with a detrimental effect.
[35] Cf. for example Mackintosh (1989) on women working on the Bud project in Senegal; Mbilinyi (1990) on bitter, over-worked and tired Tanzanian women who complain of their work being slavery and Nkwi (1987) and Fonchingong (1999) on ways in which Camerounian women's work burdens have increased.
[36] Such biases are mentioned in the Ghana Country Gender Profile of the World Bank (1999).
[37] Whitehead notes that other workers in near by districts have recorded similar phenomena: intensified work by women as population density increased and the environment became stressed and degraded. Poor crop yields make it imperative to try and till a larger area, (possibly further away) demanding more work to obtain the same crop yield as before.
[38] In 1990 the estimated level of maternal mortality was 1,000 per 100,000.
[39] See Desai (1992), who cited various sources to show the relationship could be strongly positive, weak or variable according to income level. Examination of recent World Bank (2000) compendia of country data on Population, Health and Nutrition indicators by wealth quintile demonstrates this fact very clearly.
[40] On the other hand health and population issues have often been addressed using models of household functioning quite clearly inappropriate. The inapplicability of the new household economics model of the domestic group to African arrangements was signaled long ago using evidence from Ghanaian households (Oppong 1974; 1979). The points made then still hold and have been discussed in a range of subsequent studies. Two major dimensions of conjugal and conjugal family relations were identified. These were degrees of segregation and openness respectively. A tried and tested multiple role model, taking into account the changing normative framework of local institutions and individual agency and limited options for choice and decision-making by women themselves, as well as the triggers to innovation and change introduced by role conflict and strain, provides a useful heuristic device (Oppong 1980; Oppong and Abu 1985; Oppong and Abu 1987).
[41] He recorded what he perceived to be expressions of aggression in their relationships with their children thought to be derived from their frustrations with their heavy work loads.
[42] Side effects of this squeeze which she noticed were the rising bride price and the consciousness of men of their wives' contributions to the domestic budget.
[43] Eg. Greiner (1990); Davis (1997); Panterbrick (1989).
[44] See for example Begin et al. (1997) on children and their mothers in Chad; Morely et al. (1968) on Yoruba children.
[45] For an earlier generation of studies on female migration in Ghana see Bartle on Kwahu; Dinan (1983) on women alone in Accra; Brydon (1983) on Avatime women et al.
[46] Bledsoe (1989) more than a decade ago linked the apparent rise in short term conjugal relationships in a West African context, to potential impacts on resource distribution and probable effects on children. After examining evidence on selective resource allocations and their potential health and mortality implications for children of former conjugal unions she concluded that both women and men feel pressure to allocate resources disproportionately to children by the unions they most value at present. Note the recent work in Mamprussi by A. Wilson which linked child survival to matrikin presence in the neighbourhood.
[47] The comparative study of infant environments is still in vogue (Harkness 1998).
[48] Popkin and Solon (1976); Popkin (1980); Popkin and Doan (1989); Popkin et al. (1989); MacGuire and Popkin (1990); Doan and Popkin (1993); Entwistle et al. (1995).

[49] eg See Basu (1995) on the concept of inadvertent under investment through circumstances beyond maternal control.

[50] The scholars at the UN Expert Group Meeting on Population and Women held in June 1992 in Gaborone to inform the debates of the World Population Conference held in Cairo stressed that much more must be understood about men's reproductive and familial roles and about how the costs and benefits of the children are distributed, costs include the huge work burdens women take on to ensure their childrens' present and future welfare.

[51] A male voice from the "grassroots" in *Policylines* a Newsletter from the Centre for Social Policy Studies (CSPS) University of Ghana, Legon Vol 1 Issue 3 (1998) asked, is this because women are satisfied with present arrangements or because those who attend such fora have people to care for their babies because they are of a certain class or that they don't have babies at all!

[52] Note that no mention is made of impacts of women's increased work loads and family breakdown on child malnutrition in the recent report commissioned by the World Bank on Ghana (1999) *Consultations with the Poor Ghana Country Synthesis Report* carried out by CEDEP Kumasi. Similarly in the Country Gender Profile (World Bank 1999 www. Worldbank.org/gender/info/Ghana.htm) the fact that women and children suffer from protein-energy malnutrition was listed with health problems and linked to poor environmental conditions; inadequacy of sanitary facilities and safe water supplies and lack of information on nutrition and contraceptive use. Women's heavy labour in agriculture was described in another section of the report. The link made with employment was that childbearing and child care roles form a barrier to access!