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**CAN QUALITATIVE AND QUANTITATIVE METHODS SERVE
COMPLEMENTARY PURPOSES FOR POLICY RESEARCH?
EVIDENCE FROM ACCRA**

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ABSTRACT

Qualitative and quantitative methods in social science research have long been separate spheres with little overlap. However, recent innovations have highlighted the complementarity of qualitative and quantitative approaches. The Accra Food and Nutrition Security Study was designed to incorporate the participation of a variety of constituencies in the research, and to rely on a variety of approaches—both qualitative and quantitative—to data collection and analysis.

This paper reviews the way in which qualitative and quantitative methods were used in the Accra study. The argument of the paper is that the complementary use of qualitative and quantitative approaches provides a greater range of insights and perspectives and permits triangulation or the confirmation of findings by different methods, which improves the overall validity of results, and makes the study of greater use to the constituencies to which it was intended to be addressed. But the search for truly complementary methods presents substantial challenges as well. These include extra costs, both in financial and human terms, ethical dilemmas regarding follow-up, and the need for teamwork and respect for different methodological and epistemological positions.

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1. INTRODUCTION

Qualitative and quantitative methods in social science research have long been separate spheres with little overlap. Qualitative methods have traditionally been preferred by the disciplines of history and anthropology in particular, and sociology and political science to some degree. Economics has tended to rely almost exclusively on quantitative methods. However, recent innovations have highlighted the complementarity of qualitative and quantitative methods (Chung 1998; Chung et al. 1997; Abbot and Guijt 1997). Practitioners have found means of complementing their preferred method, sometimes by borrowing from other disciplines. But several challenges confront mixed-method researchers. These include selection of methods in such a way that the results of each method are improved by the usage of the other, and determining the best sequence of the usage of complementary methods according to the objectives of the study. There is no “correct” or single way to address these challenges; it depends far too much on circumstance, context, the purpose of the research, and the type of data required.

This paper explores these issues in the context of the International Food Policy Research Institute (IFPRI) and the University of Ghana's Accra Food and Nutrition Security Study. The study was designed to incorporate the participation of a variety of constituencies in the research, and to rely on a variety of approaches—both qualitative and quantitative data—to data collection and analysis. This was done in order to ensure

that context-relevant questions and appropriate assumptions were incorporated into the research; to ensure the identification and participation of various constituencies or stakeholders from the outset; to understand the historical context in which contemporary policy research was conducted; to ensure the appropriateness of a household survey instrument to the study population; to maximize the usefulness of the information generated by the study; to triangulate findings; and to ensure follow-up and outreach.

Here I attempt to assess this kind of approach to policy research, with the conclusion that this kind of strategy is worthwhile, even though it is somewhat more time-consuming. Several caveats must be noted before proceeding: first, the Accra Study is not completed, so it is in some ways premature to assess this strategy, but the study will take several years to complete—this paper is an attempt to assess the strategy in “mid-stream.” Second, there is no immediate comparison to make in order to assess how well this kind of strategy works. Therefore, any comparison suggested here is implicitly a comparison with how the Accra Study *might* have taken place, had this strategy *not* been followed (admittedly a weak kind of comparison to make). Third, like all studies, this one had time and budgetary constraints, and therefore required decisions about the priorities of the investigators and the various constituencies to which the study is addressed. And fourth, as will be apparent from the argument that follows, it is my view that any approach to research is dependent not only on context, but also on the personalities and disciplinary/methodological training of the principal investigators. For these reasons, this paper is offered as a presentation of ideas, not as any kind of “blueprint” for research.

I briefly describe the Accra Urban Food Security and Nutrition Study, and then discuss the advantages and problems of attempting to incorporate multiple methods into a single study. The paper briefly recounts the various steps to the research process and outlines the objectives of the study. Then it assesses the attempt to incorporate multiple methods, first by assessing how the qualitative elements of the study informed and affected the quantitative elements, and second, by how the quantitative elements informed and affected the qualitative elements. Thus the paper is really a case study of one particular research project and the particular issues that arose in the course of that study—it is not intended as a general overview of qualitative/quantitative complementarity, although the intent is to add to that discussion. The emphasis will be on the ways in which different methods were used to complement each other—in particular, the use of rapid and participatory methods, more traditional ethnographic approaches, and integrated household surveys. The argument I try to make in this paper is that the complementary use of qualitative and quantitative methods provides a greater range of insights and perspectives and permits a greater triangulation—the confirmation of findings by different methods—of findings, which improves the overall quality of the study and the validity of results. The use of multiple methods also improves the quality of the results of each of the components themselves, and makes the study of greater use to the constituencies to which it was intended to be addressed. But the search for truly complementary methods presents substantial challenges as well.

2. DEFINITION OF TERMS

Before proceeding, some brief definitions are in order. Some of these definitions—particularly in the realm of qualitative methods—are subject to considerable variation. The definitions offered here are my own (as influenced over the past one-and-a-half years by my colleagues), and therefore tended to be the definitions used in the Accra study.

In general, *quantitative* methods result in numeric information, which is usually machine-readable and can be analyzed by accepted statistical tests and models. *Qualitative* methods result in textual or narrative information that is either descriptive, or subject to other forms of analysis. *Survey* methods usually generate quantitative information, although open-ended questions with narrative answers can be used on survey questionnaires. Quantitative information is usually gathered by asking the same set of questions to a specific sample of a reference population, with answers recorded in numeric codes or actual numbers. *Observational* methods can result in either qualitative or quantitative information, depending on the structure of the observational protocol, and on the nature of the selection of the sample. *Rapid appraisal* methods were developed to gather important information quickly, given that most traditional methods—whether qualitative or quantitative—were very time-consuming. As such, rapid appraisal methods can generate either quantitative or qualitative information, though more typically the latter. *Participatory* methods specifically draw the respondents or subjects of research into the research process, partly through the use of a variety of techniques that allow or

invite respondents to describe answers in their own terms, or rephrase questions in their own terms.

Participatory methods and rapid appraisal methods came together under the rubric of *rapid rural appraisal* (RRA) in the early 1980s—a set of methods for community studies on a variety of topics, but usually oriented towards problem identification and community empowerment toward change. The language describing this set of methods has changed since then, and is now widely referred to as *participatory rural appraisal* (PRA). Initially, PRA was taken to mean specifically participatory research in which the research process was owned and initiated by the community itself, rather than being a study initiated by an outside organization. However, in practice, the term “PRA” is now used to describe such a wide set of activities carried out with so many different objectives, that the term has lost much of its original meaning. Many studies now called “PRA” are mislabeled according to the initial definitions offered above.¹

In general, quantitative methods can be used to draw statistical inference—that is, drawing empirical conclusions about an entire population based on a sample. In general, qualitative methods cannot be used to draw statistical or empirical inference, but can be used to draw logical or analytical inference. This set of definitions alone begins to suggest some of the ways in which qualitative and quantitative methods complement each other.

¹The term “PRA” was used in the Accra study to indicate “participatory rapid appraisal,” which some practitioners would see as an oxymoronic usage of terminology—that is, if a study is participatory, it cannot be rapid. Under such a definition, the community studies described below should be called rapid community appraisals that included community members on the research team and relied on participatory methods. The detailed definitions of qualitative methods are important, but need not distract from the general argument that such methods can be successfully used to complement quantitative or survey methods.

3. THE RESEARCH APPROACH IN ACCRA

The Accra Urban Food and Nutrition Study (hereafter referred to simply as “the Accra study”) grew out of increasing concern within IFPRI about the impact of rapid urbanization and the growth of urban poverty on access to adequate food and nutrition by the urban poor, particularly in the wake of structural adjustment programs, which were widely believed to have had negative repercussions for the urban, wage-earning class. The study is carried out collaboratively with the Noguchi Memorial Institute for Medical Research at the University of Ghana, which had been involved in research on nutrition-related urban health problems for several years, and had developed similar concerns about the urban poor. In 1995, the Extended Poverty Study of the World Bank (World Bank 1995) noted a rapid increase in the level of poverty in Accra. Thus the combination of mutual interests, collaborative relations, and a case that appeared sufficiently compelling to warrant investigation resulted in the study. Funding came initially from the Rockefeller Foundation and the World Health Organization. The following general objectives were eventually adopted for the study:

- To understand the linkages of livelihoods, income, women's labor, and child care practices in the urban environment with food and nutritional security in a major urban center in Africa;

- To understand the nature of urban coping strategies and informal safety nets, to identify vulnerable groups, and to highlight and promote awareness of the nature of urban food and nutrition insecurity;
- To combine the usage of participatory, qualitative, and quantitative methods to provide high quality information to policymakers in national and local government, nongovernmental organizations (NGOs), and community-based organizations working in urban poverty and related fields, and to promote appropriate policies and programs for intervention in urban poverty and food insecurity;
- To develop indicators of food and livelihood security that are appropriate for urban contexts.

The steps followed in the Accra study are outlined below. In general, the approach was to identify what location-specific problems needed to be studied, to understand those problems, and then to measure the extent of the problems and their relationship to probable causes.

1. Review of literature. Like any research study, this one began with as thorough as possible a review of the available literature. Initially in Washington, this review continued long after some of the fieldwork had begun.

2. Roundtable workshop. The next step of the research process in Accra was the convening of the roundtable workshop. The purpose of the roundtable was to bring together not only others from the research community, but policymakers from national and municipal government, urban administrators, representatives of NGOs and community-based organizations working in low-income areas of the city, microenterprise-lending programs, international agencies, and the media, to alert all of these to the study, and to discuss in broad terms the objectives of the study, and to solicit feedback on the kinds of information that the study could usefully provide to actors in both the policy arena and programs and projects aimed at improving the livelihoods of vulnerable groups in the city, and their access to food, health, and nutrition.²
3. Community studies. The third step was the community studies—one in a densely populated, low-income indigenous neighborhood in the center of old Accra; the other in a peri-urban area, where there is a rapid influx of both rural migrants and people moving out from the city, making for very rapid growth in population and construction. These community studies relied heavily on participatory methodology, with the research teams made up not only of institute staff, but also representatives of local administration in both areas, the staff of two Ghanaian NGOs working in the areas, and members of both communities.³

²For full details, see Maxwell and Armar-Klemesu (1996).

³For full details, see Ga Mashie Study Team (1996) and Ngleshie-Amanfro Study Team (1996).

The objectives of the community studies included

- understanding the range of knowledge, attitudes, and practices, as well as the logic of the actors involved at the community and household level in food and livelihood security, and procurement and provision of food and care;
- understanding the logic of coping strategies;
- taking an inventory of community resources;
- understanding the genesis of urban poverty over time and space;
- describing perceptions of malnutrition, and analyzing with members of the community the factors that lead to malnutrition, as well as possible solutions to problems;
- identifying vulnerable groups;
- gauging the importance of intra-year and intra-month fluctuations in income; and,
- understanding the concept of the "household," and intrahousehold considerations related to food access.

4. Household case studies. The fourth step was a series of household case studies, undertaken in a variety of communities across the city, in a variety of different kinds of households, selected according to a matrix of criteria designed to maximize the variation of different kinds of households interviewed. The objectives of the case studies were to (1) shed further light on issues raised but inadequately captured in

the community studies (for example, migration and intrahousehold dynamics); (2) begin to incorporate the findings from the qualitative elements of the study thus far into the development of a context-appropriate questionnaire for the survey; and (3) begin to develop hypotheses for the survey. The household case studies differed from the community studies in three important ways. First, the unit of analysis was the household, not the community, so a different set of questions was asked, more closely related to the development of the survey instrument. Second, the household case studies relied almost entirely on ethnographic interviewing, and analysis of findings only after translation and transcription. The community studies had relied on participatory methods of gathering information and analysis. Third, the community studies were, by definition, limited to two specific communities; the household case studies were deliberately selected all over the entire study area in order to capture the maximum diversity of the population—something that was necessarily limited in the community studies.⁴

5. Design and administration of an integrated household survey. The fifth step was the development and administration of the survey, which was based on a UNICEF conceptual framework for childhood malnutrition, and heavily influenced by previous IFPRI work with similar research questions in different contexts (almost

⁴ For details, see Maxwell (1996). This point also highlights the important element of different levels or units of analysis. In general, the unit of analysis in the Accra study was the household, and in some cases, the individual. However, the community studies provided an important level of information that cannot be obtained through household methods—whether quantitative or qualitative.

exclusively non-urban, and mostly non-Ghanaian). The challenge at this point was to construct a questionnaire that adequately addressed the needs of the analytical model suggested by the general conceptual framework, and incorporated the Accra-specific kinds of issues that had been noted in previous steps. The specific objectives of the survey were to

- assess and compare the nutritional (anthropometric) status of children under the age of five years and mothers among different socioeconomic groups within the Greater Accra area;
- study household food expenditure patterns among different socioeconomic groups within the Greater Accra area;
- identify household-level determinants of food availability (calories/adult equivalent) and caregiving behaviors;
- identify patterns and characteristics of long-term adaptive strategies and short-term coping strategies related to food and income;
- investigate associations of determinants and patterns noted above with demographic and socioeconomic features of the household;
- identify patterns and characteristics of formal and informal safety nets related to food and income; and

- investigate the association between the index child (under three years of age) nutritional status and the availability of calories/adult equivalent, care, and health;
6. Post-survey qualitative and quantitative studies. The sixth (and almost certainly not final) phase is carrying out further specific studies in follow-up to the survey, to answer general questions that could not be answered in a specific way by the survey instrument, or questions that arose during the survey. One of these includes more qualitative work on urban households and urban livelihoods—including the production of food within the city; another relies on structured observation to collect supplemental quantitative information about time allocation and child care practices—two important components of the conceptual framework that did not lend themselves to survey methodology relying on respondent recall. The other relies on further ethnographic interviewing and observation to understand in greater detail the logic of individual and household livelihood and coping strategies, and the nature of inter- and intrahousehold transfers in the compound “matri-complex” households of Accra’s indigenous population. Another round of the household survey will be conducted within two years of the first round, if funds can be secured.

4. METHODOLOGICAL COMPLEMENTARITY: QUALITATIVE AND QUANTITATIVE

Several categories of complementarity emerge from a review of the qualitative and quantitative methods used. These are summarized below in two general categories: first, the way in which the initial usage of qualitative methods fed into or in some other way improved the survey; second, the way in which the survey complemented the earlier qualitative studies.

FIRST ITERATION: QUALITATIVE/QUANTITATIVE COMPLEMENTARITY

Preceding survey work with some kind of qualitative work is undoubtedly the most commonly thought-of area of multi-method complementarity and, in this study, included the use of qualitative methods for general descriptive purposes, for understanding the differences between *emic* and *etic* definitions used in the study, for providing the quantitative study context-specific information necessary for the development of a questionnaire, for the formulation of specific hypotheses, and for providing an overall context in which quantitative findings could be accurately interpreted.

Description

It is virtually impossible to state any research conclusions without knowing something about the context. Description is thus a crucial first step in good research, to provide the contextual backdrop. The initial parts of the research protocol in both the

community studies and the household case studies consisted of obtaining general descriptive information. In both cases, topics explored included virtually everything in the conceptual framework for malnutrition noted in Figure 1. And most of the other points in this section arose out of the description of the context in one way or another.

Sometimes a simple description can make a more dramatic impression than a complex analysis. The first step undertaken in both the community studies was a participatory mapping exercise, in which participants included what they saw as the important features of their community. In Ga Mashie (the densely-populated urban community that was the site of the first community study), it can be immediately observed that there is a problem of open defecation and overflowing open sewers. The women's map of Ga Mashie included seven public toilets, spread throughout the whole community of some 60,000 residents. Baffled, the research team asked why these particular toilets had been depicted. The equally astonished answer was that these are *all* the public toilets that there are in the whole community. A similar answer could have been acquired through a community information questionnaire (in fact, it was), but the information had a much more graphic impact on a participatory map, and also indicated the concern within the local community about the problem of the scarcity of public facilities.

*Emic and Etic Definitions*⁵

⁵*Emic* and *etic* are linguistic terms referring to internally derived and externally derived meanings. *Emic* definitions, in this case, are people's own; *etic* definitions are those of the researcher.

Surveys require standard definitions for units that are going to be compared over an entire study area, whereas people's own definitions of these units may vary widely. Perhaps the most important example of this in this study is in the area of understanding urban households. The extent to which people's own definitions of the "household" varied within the city, and the extent to which some of these definitions varied from a standard survey definition, became very clear during the community studies and household case studies, and presented a major challenge in preparation for the survey. Urban areas, by definition, include a diversity of peoples, and Accra is certainly no exception. It would be expected under such circumstances that both the definition and organization of social units would be subject to variation. However, the indigenous population of Accra have a unique form of family compound household organization that made it particularly difficult to adopt a standard definition that could be used across the entire survey area—indigenous, migrant, and mixed communities included.

Some of these compound households can be very large in terms of the number of people who sleep there, or at least call it "home." But there are smaller subunits within these large compound households. While coresidence does not define these smaller units, shared consumption does, and in particular, the allocation of money for the purchase of street foods, or foods prepared outside the household, defines the boundaries of these smaller units, which often consist of a women and her children. The community studies and pre-survey household case studies indicated that a good deal of food, income, and "services" transferred among the smaller units within compound households. The nature

of these gifts is qualitatively *and* quantitatively different from food gifts in other kinds of households, but it would have been virtually impossible (and an unproductive use of time and resources) to fully enumerate the origins and destinations of all these transfers in a compound household using survey methodology. In some ways, relying on the mother/children unit was forcing an extreme (and very *etic*) definition onto the concept of “household” in order to acquire reasonably comparable data across a very diverse sample. However, this problem was dealt with by inserting questions in the survey questionnaire that identify this type of household in the sample. They can be identified and analyzed separately if need be, or at least compared with more traditional households. Case studies in compound households after the survey helped to illuminate the logic of interhousehold transfers and other characteristics of compounds households.

Questionnaire Development: Ruling In Important Factors; Ruling Out Impossible Ones

Other findings from the community studies informed the development of the survey in important ways. One example is the extent of the reliance on street foods. As the importance of street foods became clear—both as a coping (rationing) strategy and as part of normal consumption, the difficulties of accurately measuring the consumption of foods prepared away from the household became apparent. Thus the study team was forced to figure out a way to measure the consumption of street foods, and in the process, probably made a useful contribution to the food consumption measurement methodology. Through

this process, it became clear that a single household respondent could not provide information about foods consumed away from the household, necessitating changes in the logistics of fieldwork to include interviews at night when other household members would be present.

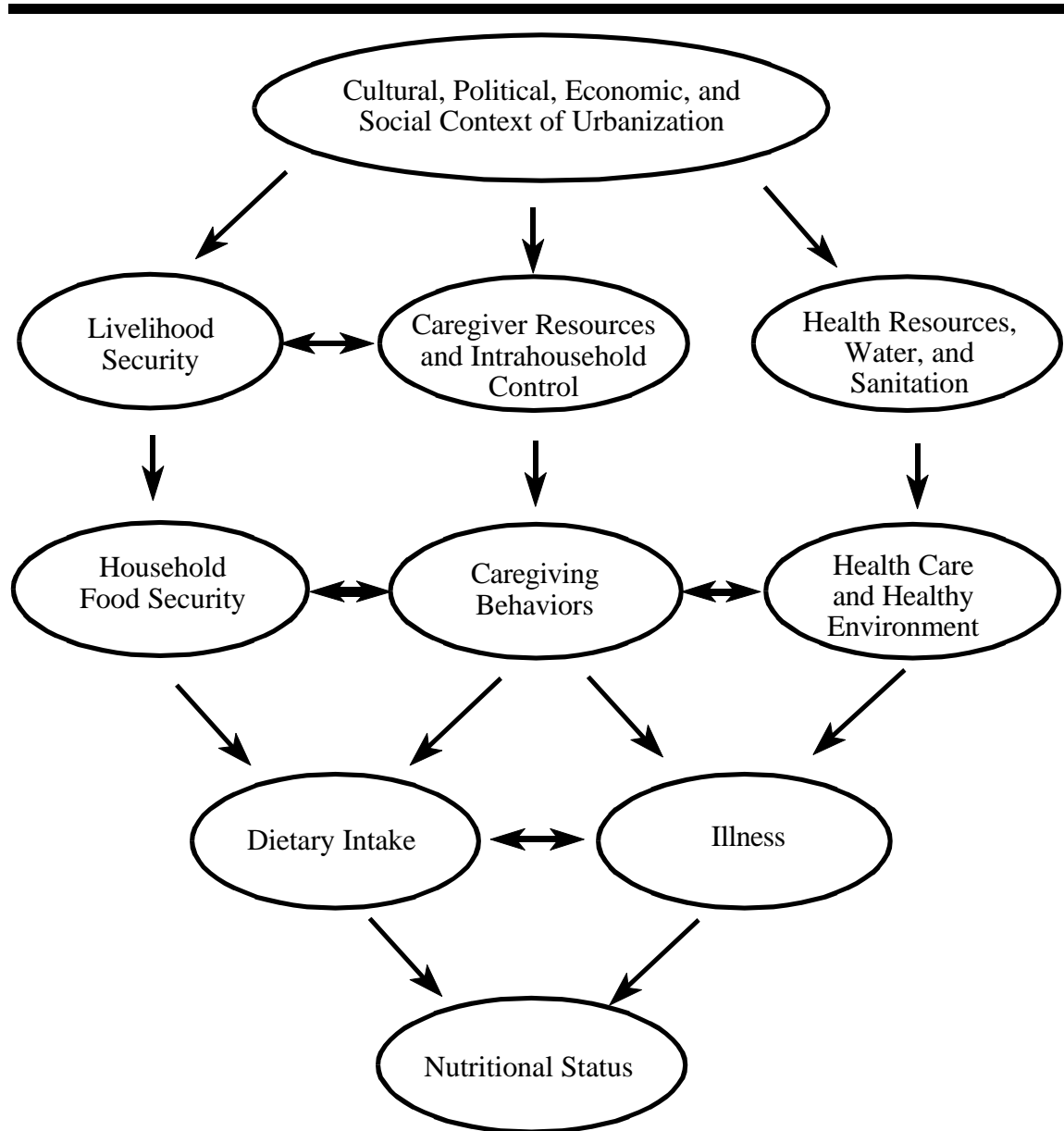
A closely related observation, but with opposite results for the survey preparation, had to do with the consumption habits of small children. Community study findings indicated that very young children make their own consumption decisions where street food is concerned, and their mothers often do not know what they are eating, or the quantities. Also, in compound households, young children are free to eat in different parts of the house (the “small units” mentioned above), and often share food among themselves. Obtaining accurate consumption information for small children (and the survey population was determined by the presence in the household of a small child) was going to be virtually impossible using recall methods in a survey. Thus, measuring dietary intake of the index child was dropped from the objectives of survey (and is a major component of the follow-up, structured observational study). Making these decisions about food consumption methodology based on qualitative work prior to pretesting the questionnaire greatly improved the efficiency of the pretest.

Deriving Hypotheses

The formulation of many of the hypotheses for the survey was based on the conceptual framework (Figure 1). The qualitative studies indicated group comparisons,

on which several hypotheses were based, and introduced some observations of phenomena that were not explicitly derived from the conceptual framework. Amid evidence from other sources that poverty in Accra is increasing (World Bank 1995), the research team observed that, in terms of people's own perceptions, the increase in poverty was the worst in the indigenous neighborhoods. Accordingly, the hypothesis was that we would find greater levels of malnutrition among the indigenous neighborhoods than among migrant neighborhoods.

In some cases, particularly in one of the community studies, the observation of undernutrition in children went hand in hand with a tendency towards obesity in adult women. So many cases were observed where a mother was overweight and a child apparently underweight, that some focus group activities were specifically designed to explore the issue in depth, including posing questions through the use of pictures and diagrams. Focus group participants agreed that the combination of overweight mothers

Figure 1 Conceptual framework

Adapted from UNICEF (1990).

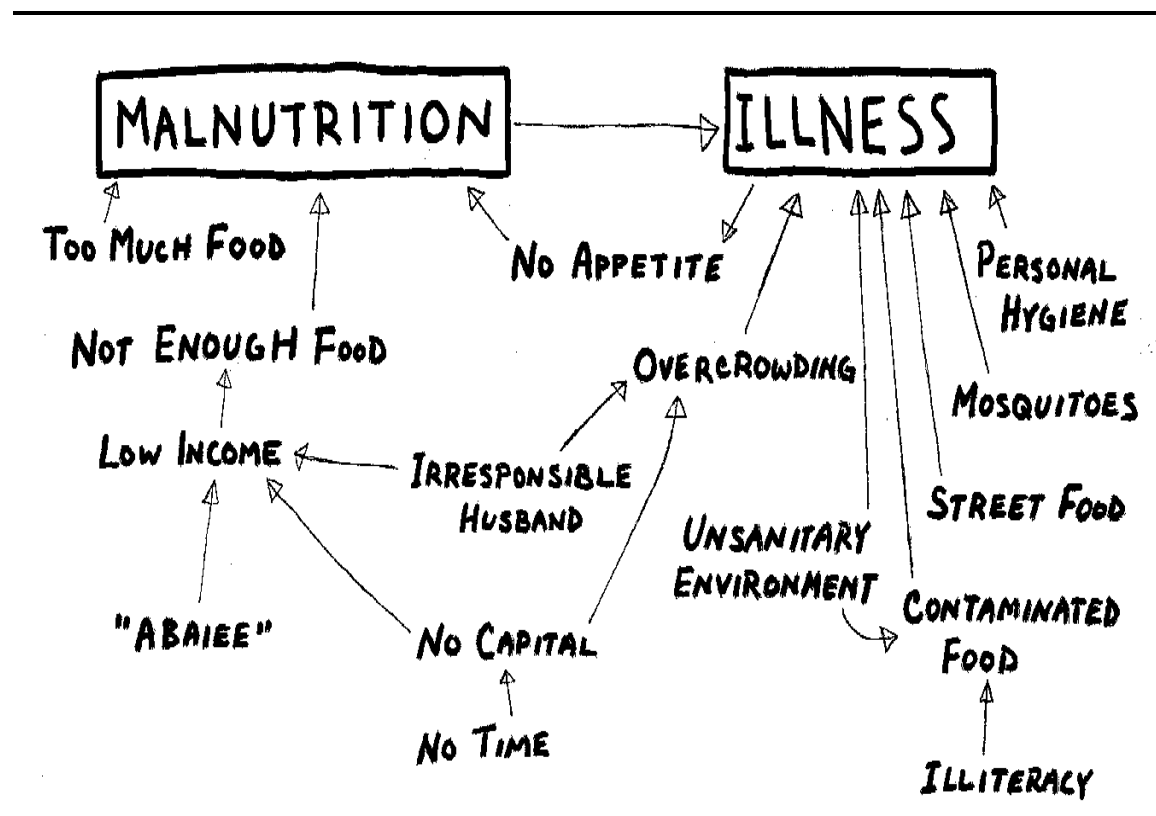
and underweight children was common, but views differed as to its causes. Some participants suggested that the causes had to do with an unequal distribution of resources for purchasing street foods, combined with inadequate supervision of what food the child actually purchased and consumed. The research team's hypothesis was that this "overweight mother/underweight child" syndrome was linked to care factors and heavy reliance on street foods, but an equally important analytical point arising directly from the participatory studies is the observation that *some* child malnutrition in Accra is not the result of outright food insecurity.

Understanding People's Perceptions

The UNICEF (1990) conceptual framework for the analysis of child malnutrition served as the basis for much of the survey and the development of the questionnaire. During the community studies, a participatory concept mapping exercise was devised to elicit the views of different groups of mothers about the causes of child malnutrition. Focus groups were asked to brainstorm all the possible causes they could think of for malnutrition. The brainstorming was recorded, and each idea was noted on a card and given some kind of symbol related to the idea, so that those who could not read could participate. The group was then asked to work together to arrange the cards on the floor, using a piece of chalk to show how they thought the various symbols or concepts were related. The team then probed more deeply into the "root causes" of malnutrition that such an exercise depicted. These tended to fall into several categories, and the categories

were, in fact, fairly closely related to the conceptual framework of the study. The study conceptual framework, based on UNICEF (1990) is depicted in Figure 1, and an example of the focus groups' concept maps is depicted in Figure 2. The important points arising from the discussion of the maps is the extent to which virtually all of the concepts noted revolve around the basic problem of poverty—even if some of the points mentioned were not immediately tied to the amount of income an individual or household earns. This exercise had important implications both for the way in which the survey was

Figure 2 Women s focus group concept map for malnutrition



designed—in terms of the inclusion of the root causes mentioned above—and for interpreting results of the survey.

Interpreting Odd Findings

In addition to informing the way in which the survey could be organized, the qualitative findings enable the research team to better interpret quantitative results of the survey.⁶ For example, taking the survey findings alone, it would appear that very few people earn a livelihood from fishing in Accra. While it is true that fishing is in decline as a livelihood, the reason for its absence from the survey sample is because in the indigenous (fishing) communities, a duo-local household structure is maintained—husbands and wives do not live in the same households, or even share consumption to a very large degree. Almost without exception, the actual catching of fish is a male occupation (whereas processing fish is largely a female occupation). Since small children stay with their mothers, and the survey population was defined as households that included a child under the age of three years, it is not surprising that there are not very many fishermen in the survey sample—and in fact, those few fishermen who were interviewed were almost entirely *not* from the indigenous population of Accra.

⁶Note that this is a way that qualitative findings complement quantitative findings *after* the qualitative element of the study. Much of the complementarity emphasized in this paper (and in the literature on complementarity more generally) highlights the way in which qualitative methods feed into or *precede* quantitative methods.

SECOND ITERATION: QUANTITATIVE/QUALITATIVE COMPLEMENTARITY

The major purpose of the survey was to generate quantitative data for the description and analysis of child malnutrition, as well as the other objectives mentioned above. The survey was based on a representative sample of the entire study area, and most of the results of the survey were intended as ends in themselves. However, the survey also complemented the qualitative elements of the study, both by quantifying some of the observations made during the more qualitative elements of the study, and also by suggesting further, follow-up kinds of studies—both qualitative and quantitative. These include specific empirical issues for which survey methodology was not appropriate, obtaining *emic* perspectives on survey findings, using qualitative methods to note changes over time to complement cross-sectional findings, and the use of alternative methods to off-set biases.

Quantification

The most important way in which the survey complemented the information generated by the community and household case studies is in providing representative information on the frequency of various patterns and observations made in the latter. There are many examples of this, including the quantification of consumption patterns, coping strategies, levels of poverty, intra-urban inequalities, and the prevalence of malnutrition. A particularly illuminating example resulting from the qualitative elements of the study is the “overweight mother/underweight child” syndrome, just mentioned. The

research team had no way of knowing at the time of writing the community study reports whether this “syndrome” was a freak observation in the particular place we had selected to carry out a community study, or was a widespread or serious problem. Accordingly, early in the analysis of the anthropometric data, categories of child nutrition will be compared with categories of maternal body mass index.⁷

Suggesting Follow-Up

Another form of complementarity is in examining survey findings to suggest follow-up qualitative investigation. This is an important area to emphasize to survey methodologists who may use qualitative methods to inform quantitative work, but rarely vice versa. In the Accra study, it became clear during the survey that some modules were not obtaining full information about the topic at hand: the most important example was in the enumeration of livelihoods, and in enumerating tertiary income-generating activities in particular. In some cases, the reason for this was that the respondent did not consider such an activity to be “income-generating,” even if he or she gained some amount of cash or in-kind income from it. In short, it was not their profession or their “job,” so therefore it was not mentioned when they were asked about livelihoods. In such cases, better probing by the enumerators was able to correct the situation. In other cases, respondents were clearly uncomfortable talking about income-generating activities, either because they

⁷About one-third of undernourished children in the survey sample turned out to have overweight mothers, regardless of the indicator of child undernutrition examined.

considered it their private business (which is a common problem with most surveys that inquire about incomes), or because they were engaged in activities that are illegal or considered antisocial. In both types of cases, however, quantitative information gathered was inadequate for a full discussion of livelihood strategies in an urban area. Further work, relying on qualitative case-study and group interview methods, will be necessary to fully understand urban livelihood strategies. Group interviewing permits discussion of issues that may be too sensitive to put into survey questionnaires, or even one-to-one ethnographic interviewing. Group interviews permit people to speak in more vague, third person terms, even if personal experiences are clearly being described. This permits, for instance, exploration of illegal or antisocial forms of livelihoods or other behavior in ways that respondents would refuse to do in more specific, first-person terms: prostitution and theft as coping strategies, for instance; extortion by and bribery of public officials, particularly municipal security police charged with keeping streets cleared of hawkers and informal trade; the abandoning of children; etc.⁸

Emic Perspectives on Implications of Survey Findings

Participatory methods help to outline the kinds of problems people face, and to begin thinking about the range of possibilities for intervention, but are unable to put

⁸It is important to note, however, that this method does not generate quantitative information. In fact, most of the famous studies of illegal or “antisocial” activities are ethnographies. Other types of research usually succeed only if the researcher is well-known and trusted by the study population—a difficult condition to fulfill for a random sample survey.

quantitative values on any of these things. The survey helps to quantify the types and frequencies of problems people face, and therefore may help to prioritize, from a formal point of view, the kinds of interventions in both public policy and programs and projects that could be undertaken. However, survey results alone can rarely predict how such interventions will be accepted by the communities they are intended to benefit. Here, further qualitative work is necessary to analyze possible interventions with community participants. Such analysis will follow the kind of activity outlined above as participatory concept-mapping.

Understanding Trends

Quantitative data are often the most useful if collected by a longitudinal study, so as to be able to show trends over time. But many studies cannot afford the time and financial resources needed to collect this kind of data. Some participatory methods can give a kind of qualitative “substitute.” For example, during the community studies, the research team tried to understand the impact of rapid growth over the past five or six years on the economy of a peri-urban community. The diagram in Figure 3 shows one focus group’s interpretation of the impact of urbanization on various livelihood groups in the community—and is one example of a story that repeated itself many times during the course of that particular community study. Clearly, this kind of information would be considered “anecdotal” by a time-trend analyst, and it cannot be incorporated into quantitative analysis—at most, it can be helpful background to interpret cross-sectional

Figure 3 Trends in the impact of urbanization in a peri-urban area

	FARMERS	FISHERS	TRADERS	CONSTRUCTION ARTISANS	CASUAL LABORERS
Alternate sources of income	↗	↗	↗	↑	↑
Access to resource base (land & fish)	⇓	⇓	N.A.	N.A.	N.A.
Access to markets	↗	↗	↑	↑	↑
Access to credit and inputs	↔	↔	↔	↔	N.A.
Total INCOME	⇓	⇓	↗	↗ but erratic	? erratic
Quantity of food consumed	⇓	?	↗	↗	↔

data.⁹ With regard to complementary methods, however, the point is that some amount of information—even if it cannot be incorporated into the quantitative analysis directly—is better for interpreting cross-sectional data than no information at all.

⁹A qualitative analyst would retort that if you hear the same anecdote enough times, it starts to become a form of quantitative information, even if it is “anecdotal.”

Use of Multiple Methods to Capture Cases Missed by Survey Research

Even the best survey sampling procedures may miss important cases. Multiple methods can both help to identify such cases, and add critical information about them. One of the objectives of the Accra study was to identify and study particularly vulnerable groups. In order to capture the diversity of the urban population (as well as for other reasons), the survey sample had to be selected through a multistage, random process. The results of that sampling strategy are representative of the city as a whole, but the sample did not include all the vulnerable groups in the city: first, the sample happened not to include any community housing one of the most vulnerable groups in the city—the so-called “kayayoo”—young female, short-term migrants, mostly from Northern Ghana, many with infants and small children, who work as porters in the city’s markets. Second, another vulnerable group—street children—was defined out of the survey population because the sampling unit was households. The study team knew about these groups because of good descriptive work prior to the survey.

Third, in virtually every enumeration area of the city that was selected, the local chief or Assembly Member asked why that particular place had been selected, and went on to say something like, “if you really want to see malnutrition, I can show you a place just over here that is much worse than the place you selected.”¹⁰ Follow-up case studies can

¹⁰These are virtually the precise words of six of the local leaders with whom we liaised in the 16 enumeration areas, including, most tellingly, the leaders from the two enumeration areas that had the highest prevalence of stunting. In other words, the two areas in the city where we found the worst malnutrition were not by any means the worst areas of the city, or even of the local community.

examine conditions among the groups that were missed in the survey, as well as in that other “place just over here,” referred to by the local leaders, or among other known vulnerable groups. While the results of such investigations cannot be incorporated in a quantitative manner with survey data, they can shed light on differences between the representative sample and the logical extremes.¹¹

5. ISSUES FOR DISCUSSION

This paper has advocated a number of ways in which usage of different research methods can be truly complementary—that is, where each set of methods genuinely enhances both the validity and the usefulness of the information generated by the other set of methods. And this paper has advocated using different methods iteratively. But the discussion above raises several questions about the use of multiple methods.

IS IT WORTH IT?

The first question is, has the study benefitted from incorporating such an approach? Was anything useful learned from the roundtable workshop held at the outset? Given that the study was dominated by a survey, perhaps the major question should be: Did the study benefit from the incorporation of qualitative and participatory methods? Several answers

¹¹It is necessary to point out that, depending on the objectives of the study, qualitative and quantitative methods may have to be targeted on *exactly* the same sample. This was deliberately not the case with this study.

can be suggested, but these should be debated, given the lack of a directly comparable study that did *not* include qualitative methods.

First, the roundtable workshop served as a discussion of issues that the research team was aware of, but which needed to be prioritized. The roundtable also helped to ensure that the study was driven both by the problem and the context, as well as by a theoretical model,¹² and helped to identify the various constituencies with an interest or stake in the outcomes of the overall study. Second, the qualitative component took up less than 10 percent of the budget of the overall study, so one could argue that the points discussed above came at little extra cost, and benefitted the study immensely. On the other hand, *some* of the points discussed above would have been noted in a standard presurvey kind of exercise that was not specifically labeled either “qualitative” or “participatory.” The argument advanced here is: (1) by taking a specific opportunity for exploration, probably certain things were discovered or noted that would not have been otherwise—and this paper has attempted to highlight what some of those things were; (2) by deliberately educating ourselves through the community studies, limited resources were better allocated for the survey—and this was a fairly complex survey, involving multiple respondents in each household; (3) by taking a specific opportunity for post-survey qualitative follow-up, survey data can be better interpreted, and policy and programmatic intervention recommendations can be better adapted; and (4) the research

¹²It is important to note that these two (context/problem-driven approach and model-driven approach) were not seen as two competing approaches, but one complementary approach.

team is better acquainted with all the constituencies with an interest in the outcomes of the study, which helped to guide the study, and aids immensely in putting the results of the study to practical use.

There are, nevertheless, costs to this kind of approach (even if the financial costs appear not to be prohibitive). One of the costs was in having to reorient the focus of the research team from one approach to the other and then back again. As discussed below, there are significant differences, not only in the particular kind of methodological tools being used, but also in the rationale and philosophy underpinning the methods. As a general rule, it is probably not recommended to rely on the same field staff for very different field methods—switching back and forth is confusing for staff and time-consuming for the study.¹³ On the other hand, specialized field staff may be a luxury that few studies can afford.

Another cost is the time it takes to properly analyze qualitative (ethnographic) data. In this particular case, there was only limited time for analysis of case study materials prior to the survey. Ethnographic case studies are usually an excellent way of generating hypotheses or adapting them to local circumstances, but in this case, our time was very limited. Participatory methods are quicker, but are generally not oriented at generating survey hypotheses, although perhaps this could have been a more explicit objective of the community studies.

¹³It must be clearly said, however, that the core group of the study, principal investigators and research assistants alike, coped very well with the switching back and forth. This is a general comment on switching methods, not a comment on the capability of the staff of this particular study.

EXPECTATIONS AND FOLLOW-UP

A second issue concerns the expectations raised by research, particularly participatory research. PRA methods, in particular, are aimed at empowering some kind of community response to the problem under study, and sometimes that response requires outside assistance or follow-up. However, research institutes are rarely in position to provide that kind of assistance. And even if outside resources are not necessary, one brief study is unlikely to constitute sufficient community empowerment to “solve” a problem, even if the problem and potential solutions are well defined by the study. Is it therefore unethical for research institutes to use this kind of methodology? Two partial answers to this dilemma can be suggested on the basis of the Accra study.

First, while community empowerment is explicitly an objective of PRA methods, the issue of raising community expectations is not limited to PRA types of studies. Survey respondents are equally eager to know in what way, if any, the study is going to benefit them and their community, and may be equally disappointed if the research team makes no follow-up (at the very least in terms of presenting their findings and their recommendations). Therefore, the ethical issue of raising expectations is not solely a question of the kinds of research methods used—it is an issue that must be faced, somewhat regardless of method, although it is arguably less acceptable for participatory methodologists not to face the issue squarely.

Second, recognizing that community empowerment was an objective of the method, the PRA community studies done in Accra were deliberately designed and carried out in

collaboration with other organizations, including representatives of local government, Ghanaian nongovernmental organizations (NGOs) working in both communities, and members of both communities. Part of the rationale was to build some capacity for this type of method within the staff of the two NGOs, so that follow-up could be provided by an organization with roots in and commitment to both of the communities. In fact, the exercise undertaken has had important impacts on the program planning and field methods of both organizations in response to community problems. It is not appropriate for the study team to take credit for these changes, but it can be suggested that the collaborative study effort was one of the factors involved. The important point is the need for collaborative efforts that help to guarantee some kind of follow-up, when research institutes themselves may not be able to provide that follow-up. The same general point applies to the approach of the overall study: research institutes are rarely, if ever, in a position to implement their own studies' findings in terms of policies or programs, which necessitates building relationships with a variety of constituencies throughout the course of the study.

THE CHALLENGE OF COMPLEMENTARITY

The third general point is that, as argued above, the use of truly complementary methods is not equivalent to simply including an "add-on" component. That is, simply adding a different kind of data collection method fails to capture the full potential of a complementary approach. Put slightly different, a specialist in participatory research

would reject the notion that the main benefit of incorporating PRA methodologies into a multi-methods study would be to provide better information for the design of a survey, and would argue that real purpose of PRA methods lies elsewhere (even though I have argued here that improving the design of the survey was *one* of the important outcomes of having carried out the community studies). Likewise—from the other perspective, a survey specialist would reject the notion that the main benefit of a survey is to provide some frequency counts of interesting categorical variables (though, again, I have argued that this was *one* outcome). But to benefit from the full potential of *complementary* approaches, the researcher (or at least the research team) has to somehow understand and embody not only the skills or tools of both sets of methods, but also the principles underlying different approaches to methods, and there are major differences in these principles, and differences in outcomes. One benefit of multiple methods is triangulation, or the confirmation of important findings by different methods. But another benefit is broadening the range of findings or the potential use of findings.

Participatory approaches include asking questions and analyzing answers *with* the members of a community in which research is taking place, and specific PRA approaches call for the outright community ownership of the research process. The emphasis with this approach is not just gaining information, but gaining information that will empower the community to do something in response to the problem under study. Some more traditional approaches to qualitative research (ethnography in particular) presume that the research process is “owned” only by the researcher, but may rely heavily on local

informants to help researchers to understand or interpret local phenomena. “Ownership” and “empowerment” issues are not usually concerns of survey research; pre-survey investigations may rely on community informants.

It should be noted that what is being discussed here is not simply difference between research methods, but also to fundamental differences in the world view of the researcher. While it is not out of the question to use qualitative methods to test hypotheses, or to use quantitative methods purely for descriptive purposes, qualitative methods are largely associated with an inductive approach to research that emphasizes discovery, description, and logical inference (and, in the case of participatory methods, also emphasizes empowerment and community action); quantitative methods are largely associated with a hypothesis-driven, deductive approach to research that emphasizes prediction, control, and statistical inference. The argument here has been that one study can incorporate both an inductive and a deductive approach, but it is not surprising that most of the bridges across the methodological gap have been built, at least initially, for the purposes of gaining supplementary—not complementary—information.

While it is something of an exaggeration to equate methodological preference directly with the perspective of the researcher on the nature of knowledge itself, epistemological differences between methodological approaches to research also run deep: quantitative methods tend to reflect a logical positivist underpinning, and the generally accepted view among quantitative researchers is that a single, external reality exists “out there,” and the job of researchers is to understand that reality as closely as possible, often

through the use of models. Many qualitative researchers claim to be “soft-nosed” logical positivists (Guba and Lincoln 1994; Lincoln and Guba 1985)—that is, they tend to accept the view of a single, external reality, but are more hesitant to model it in a singular, predictive fashion. On the other hand, advocates of participatory research are unabashedly postmodernist in their epistemology, openly embracing, for example, the notion of multiple perspectives on reality, and the proposition that “indigenous” knowledge is as valid as “scientific” knowledge—which is anathema to logical positivism.

For all these reasons, many researchers prefer to stick to their chosen method, where they intuitively (if not explicitly) accept the philosophical foundations. The position advocated in this paper is that, while many of these deeper differences are not so easy to bridge, research methods can be used in an iterative and complementary manner to produce results that are of both greater validity and greater usefulness. But in order to do this in such a way as to produce complementarity, researchers must understand and respect, if not necessarily fully embrace, the epistemological foundations that underpin alternative methods. In practical terms, this may require some separation of methods from philosophy and epistemology. Yet it must also be recognized that method fundamentally depends on philosophy to some extent, and the failure to acknowledge this may result in the use of an alternative method being reduced to a kind of window dressing that, while it may have external appeal, fails to really grasp the internal logic of alternative methods—and therefore fails to capture the benefits of a genuinely multi-method approach to research. The debate over the incorporation of PRA or ethnographic approaches into

studies dominated by survey methods have included numerous examples of the dangers of this kind of “window-dressing” (e.g., Chambers 1995; Richards 1995).

The argument I have attempted to make in this paper is that in the Accra study, by preceding the survey with several stages of qualitative research, the survey was better informed than it would have been as a stand-alone exercise. By recognizing that the participatory elements of the study were not purely ends in themselves, but were part of a study that incorporated a more deductive element, the community studies were able to incorporate both an inductive approach to the context *and* have some questions be guided by a specific conceptual framework. By leaving some of the household case studies until the first round of the survey had been completed, the case studies were better able to fill-in critical gaps in the understanding of the organization and functioning of urban households, thus case studies fulfilled both an “exploratory” *and* a “confirmatory” role (Miles and Huberman 1994). In brief, the reliance on multiple qualitative and quantitative methods has improved the quality of the overall study, but has also improved the quality of each of the subcomponents as well.

IFPRI’s mission is not *just* research (the construction of new knowledge); it is *policy* research (the construction of new knowledge for a specific policy purpose—usually to solve some kind of human problem). IFPRI’s mission is “to identify and analyze alternative national and international policies for meeting food needs. . . , to make the results of its research available to all. . . , and to strengthen institutions conducting research on food policies. . . .” The argument in this paper is that multiple methods can help

achieve this mission, but that a narrow focus on the methods themselves belies the challenge of fully integrating qualitative and quantitative approaches into a single study.

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