Chapter 1

What Have We Learned from Research on Intrahousehold Allocation?

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Many decisions that affect the well-being of individuals are made within families or households. The processes by which resources are allocated among individuals and the outcomes of those processes are commonly referred to as "intrahousehold resource allocation." Since the early 1990s a growing literature has paid increasing attention to the role that intrahousehold resource allocation plays in affecting the outcome of development policy (see Strauss and Thomas 1995; Behrman 1997; Haddad, Hoddinott, and Alderman 1997 for reviews). This literature questions the traditional view that individuals within the household share the same preferences or pool their resources. The literature also recognizes that rights, resources, and responsibilities of household members—especially men and women—may be different.

If household members in fact have different preferences, resources, and responsibilities, then designing policies while relying on a model of the household that assumes that individuals share the same preferences and pool their resources—the unitary model—may lead to policy failures (Haddad, Hoddinott, and Alderman 1997). The effect of public transfers may differ depending on the identity of the income recipient. Households may reallocate resources away from the transfer recipient to compensate for the transfer receipt. Policy initiatives and information addressed to one person in the household may not be shared with other household members. And assuming that households act as one disables many policy levers that could be brought to bear on development problems.

Despite increasing evidence rejecting the unitary model, the body of research from which generalizations can be drawn is limited. Few studies

have been replicated over a range of conditions and cultures (Haddad, Hoddinott, and Alderman 1997). Other factors besides policy clearly affect intrahousehold allocation, such as the extended family, community, and other social groups. More important, existing empirical work in economics may not adequately capture the specific cultural contexts in which individuals within households and families make decisions.

The main objective of this book is to synthesize new knowledge on intrahousehold allocation, drawing from the gender and intrahousehold research program of the International Food Policy Research Institute (IFPRI) and based on specially designed household surveys in developing countries. In four of these countries—Bangladesh, Ethiopia, Guatemala, and South Africa—data sets were specifically designed to examine intrahousehold allocation and household decisionmaking, drawing on qualitative information to create culturally specific but quantifiable indicators of factors that affect household decisionmaking. In these "high-concentration" countries, IFPRI researchers used a common framework and similar methodologies to analyze a wide range of policy issues, permitting comparisons across countries. In other countries, modules on intrahousehold allocation and gender were added to ongoing or planned studies by IFPRI researchers and their collaborators. In most, but not all, of these countries, researchers made an explicit effort to test the unitary model of household behavior against an alternative that allowed for different preferences of household members and nonpooling of household resources. This volume therefore represents where IFPRI's research program on intrahousehold issues has gone since the publication of Haddad, Hoddinott, and Alderman's *Intrahousehold Resource Allocation in Developing Countries: Models, Methods, and Policy* (1997).

This volume is designed to give development students and practitioners an overview of new research on the role of gender in household decisionmaking and development processes. It consists of a series of briefs, or chapters, based on the original research, and its focus is on results and policy implications; the interested reader may refer to the original papers cited in a footnote at the beginning of each chapter for more details on theory and methodology. The chapters are organized according to the following broad themes: (1) power and resources within the household; (2) agriculture and natural resources; (3) health and nutrition; (4) social capital, legal institutions, and property rights; and (5) the impact of policies and interventions. Each section begins with an overview chapter that describes the specific contribution of each chapter and the key messages on each theme, while each chapter contains a summary of the research.

Context and Rationale

Four factors have contributed to the tremendous growth of research on intrahousehold issues in recent years: (1) the development of new models of household decisionmaking; (2) an increased awareness that paying attention to intrahousehold allocation issues matters in the design and implementation of development policy; (3) the growing availability of data from developing and developed countries with which to test alternative household models; and (4) the use of qualitative methods, arising from increased collaboration with anthropologists and other social scientists, to understand non-economic dimensions of human behavior.

This section briefly reviews these factors to provide the context and rationale for the recent research.

Development of New Models of Household Behavior

Economists have increasingly questioned the traditional model of household behavior and proposed alternative models that bear closer resemblance to reality (see Haddad, Hoddinott, and Alderman 1997 for a review of these models).[1] Most economists see the household as a collection of individuals who behave as if they agree on how best to combine time, goods purchased in the market, and goods produced at home to produce commodities that maximize some common welfare index. This approach is appealing because of its relative simplicity and the diversity of issues it can address—such as the determinants of education, health, fertility, divorce, migration, labor supply, home production, land tenure, and crop adoption (see Becker 1973). It is

[1]Many of these challenges came from studies in the 1980s that suggested that men and women spend income under their control in systematically different ways. These studies included Guyer (1980); Tripp (1982); Pahl (1983); and studies from different countries (for example, Fapohunda 1988) in the volume edited by Dwyer and Bruce (1988). A series of studies on agricultural commercialization and nutrition in developing countries also found that female-controlled income is more likely than male-controlled income to be spent on food (Kennedy 1994). Evidence that men and women may have different production priorities can be found in the work of Dey (1985) on irrigated rice in The Gambia; Jones's (1983) formal model of intrahousehold conflict and husband's and wife's gains from cooperation based on work in the Cameroon; Mukhopadhyay's (1984) decision model of the sexual division of labor for household tasks; Hill's (1963, 1978) description of Fante women's entrepreneurial behavior; and Gladwin's (1975, 1982) models of women's marketing and farming decisions. Implications of these differences for project design are discussed by Cloud (1983). These and other studies from Sub-Saharan Africa are reviewed in Gladwin and Macmillan (1989).

called the unitary model because this label describes the household acting as one, with a single preference function. The existence of a single household welfare function reflecting the preferences of all members is not an innocuous assumption, however. If individual household members have different preferences, then these differing preferences must be aggregated in some fashion; the social choice literature illustrates the theoretical difficulties associated with this. Moreover, although the unitary approach allows person-specific prices, it assumes that all household resources (income, capital, labor, and land) are pooled. If preferences are not common to all household members, at least one household member must have the ability to monitor the others and to sanction those who fall foul of the household's rules, an issue of information flows as well as control.

Concerns regarding the assumptions underlying the unitary model have spawned a number of alternatives that weaken those assumptions and focus on the individuality of household members and the possible differences in their preferences. One class of these is the so-called collective models (Chiappori 1988, 1992, 1997) that allow differing preferences and only assume that allocations are made in such a fashion that the outcomes are Pareto optimal or Pareto efficient. That is, an individual within the household can only be made better-off at the expense of another household member.

All collective models have two common features: first, they allow different decisionmakers in the household to have different preferences, and, second, they do not require a unique household welfare index to be interpreted as a utility function, thereby allowing the index to be dependent on prices and incomes as well as "tastes" (Chiappori 1992). As a consequence, both unitary and collective models permit existing intrahousehold resource allocation rules to affect household responses to public policy. Although both models allow public policy to change intrahousehold allocations of a good, however, only the collective model permits public policy to affect the *rules* of intrahousehold allocation. In the collective model as described, nothing is assumed a priori about the nature of the decision process; that is, it does not directly address the question of how individual preferences lead to a collective choice. If one is willing to put more structure on the decisionmaking process, two subclasses of collective models emerge, one rooted in cooperative and the other in noncooperative game theory.

In the cooperative approach, individuals have a choice of remaining single or of forming a household or other grouping. They choose the latter option when the advantages associated with being in a household outweigh those

derived from being single.[2] The existence of the household generates a surplus, which will be distributed among its members; the rule governing this distribution is the central issue of the analysis. Unitary models represent a special case of cooperative collective models where preferences are identical and, as a consequence, resources are pooled.

Within the cooperative subclass are examples that represent household decisions as the outcome of some bargaining process applying the tools of cooperative game theory. Casting allocation among household members as a bargaining problem, Manser and Brown (1980) and McElroy and Horney (1981) have emphasized the influence that outside options (also called "exit options" or "threat points") are likely to have on spouses' bargaining power and hence on intrahousehold welfare. If this approach is correct, one may hope to affect intrahousehold welfare by improving the exit options of disadvantaged groups. To be successful, however, one must first identify the relevant exit options. The literature has proposed two main categories of outside options: (1) noncooperation within an existing household—the so-called "separate spheres" hypothesis of Lundberg and Pollack (1993); and (2) separation from the household—the exit option that forms the basis of the work of Manser and Brown (1980) and McElroy and Horney (1981).[3] These exit options are themselves a function of extra environmental parameters (EEPs) such as laws concerning access to common property and prohibitions on women working outside the home (McElroy 1990). The vast majority of bargaining models rely on a Nash solution (Nash 1953).

The second subclass of collective models relies on noncooperative game theory. While all cooperative models are Pareto efficient, only some noncooperative models are; noncooperative models that do not lead to Pareto-efficient outcomes would therefore not be included in the class of collective models.

The noncooperative approach (Ulph 1988; Kanbur 1991; Lundberg and Pollak 1993; Carter and Katz 1997) relies on the assumption that individuals

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[2]The distribution of gains within marriage is a common application of cooperative models. It is possible, however, that individuals (particularly females) may not have a choice about getting married or forming a household. One can argue that in many contexts the decision to marry or form a new household may be motivated by non-economic factors, such as society's views of individuals who do not marry.

[3]Fafchamps (2001) argues that the two should be treated simultaneously. Indeed, the threat of noncooperation need not be credible if the spouse can credibly retaliate by leaving the household.

cannot enter into binding and enforceable contracts with each other. Instead, an individual's actions are conditional on the actions of others. This conditionality of action implies that not all noncooperative models are Pareto optimal—that is, a redistribution of resources from one household member to another could still improve overall welfare. These models assume that individuals within the household not only have differing preferences, but also act as autonomous subeconomies. In these models the household is depicted as a site of largely separate gender-specific economies linked by reciprocal claims on members' income, land, goods, and labor. Net transfers of income between individuals are the only link between them. Thus, when making decisions, each person takes net transfers as given and chooses the goods that he or she will consume to maximize individual utility, rather than the utility of the household unit. Since differential allocations across household members are consistent with both unitary and collective models, the empirical challenge lies in testing whether or not such differentials are consistent with a unitary model of the household or with a decisionmaking process in which different household members have different preferences and varying abilities to enforce these. If the unitary model does not hold, then policymakers have additional levers with which to influence intrahousehold outcomes.

Relevance of Intrahousehold Issues to Policy

As already mentioned, using the unitary model of the household as a guideline for policy prescriptions may lead to four types of policy failures. First, the effect of public transfers may differ depending on the identity of the income recipient. If transfers directed to the husband or the wife have different impacts, for example, targeting transfers to the household may not result in the desired outcomes. Second, public transfers may affect the behavior of nonrecipients of the income transfer. If households reallocate resources away from the transfer recipient to compensate for the transfer receipt, the intended effect of the income transfer may not be realized. For example, suppose that a state introduces a public social security scheme that taxes the young and subsidizes the old, leaving aggregate income unchanged. This scheme might lead to a reduction in private urban-rural remittances from the young to the old, with consumption by individual members unchanged. Third, at the project level, the unitary model predicts that it does not matter to whom policy initiatives are addressed, since information, like other resources within the household, will be shared. Numerous examples, however, many from Sub-Saharan Africa, have shown that targeting one individual rather than the other has led to non-adoption of

particular policies or to unintended consequences of policies adopted. Lastly, adherence to a unitary model of the household eliminates many potential solutions to development problems. The unitary model predicts that household behavior can be changed only by changes in prices and household incomes. In contrast, the collective model posits that a large range of policies can be used to affect household allocation outcomes, such as changes in access to common property resources, credit, public works schemes, and legal and institutional rights.

Policymakers have used the findings from intrahousehold research to design programs that aim to change household behavior by transferring income directly into the hands of women, as illustrated by Mexico's *Programa Nacional de Educación, Salud y Alimentación* (PROGRESA) (National Program for Education, Health, and Nutrition, discussed in Chapters 29 and 30). The receptiveness of policymakers to designing and implementing such programs, as well as to using experimental or quasi-experimental methods of evaluation, has increased our understanding not only of how households make decisions, but also of how policy can affect those decisions. Moreover, the success of microcredit programs targeted to women, exemplified by the Grameen Bank in Bangladesh, has stimulated a new generation of projects that target technologies to women, as discussed in the Bangladesh case study in Chapters 10 to 13. As more interventions are designed that address intrahousehold issues, one hopes for a stronger interaction between policy and research, and more effective programs and policies.

Availability of Disaggregated Household Data

The "explosion" in both the quantity and quality of household- and individual-level data (Strauss and Thomas 1995) has contributed to the growing empirical literature on intrahousehold allocation. Although national statistical agencies have been collecting nationally representative data since after World War II, it is only relatively recently that these data sets have permitted the analysis of intrahousehold issues. The development of the household economics approach (Becker 1973) prompted the design of household surveys that collected data suited to the application of the household production approach.[4] Some of these innovative surveys

[4]Strauss and Thomas's (1995) review cites the following early examples: the Additional Rural Incomes Survey (ARIS) fielded by the National Council of Applied Economic Research (NCAER) in India; the Malaysian Family Life Survey, fielded by RAND; the RAND–Institute for Nutrition in Central America and Panama (INCAP) surveys in Guatemala, and a series of linked household cross-sectional surveys in Laguna Province, Philippines (Evenson 1978).

undertaken in the 1960s and 1970s, such as the Malaysian Family Life Survey in 1976–77, as well as the first Living Standards Measurement Surveys (LSMS) in Peru and Côte d'Ivoire in 1985, have influenced the design and implementation of subsequent surveys. An important innovation in the LSMS is the integration of household budget data in a broad-purpose sociodemographic survey, allowing for the analysis of individual-level outcomes as well as household consumption and savings decisions. A growing number of surveys now include individual-level outcomes as well as a wealth of information on economic variables. This change has certainly contributed to the growing literature testing the unitary model of the household in a variety of developing- and developed-country situations.

Another stimulus to the collection of gender-disaggregated data came from farming systems research. Researchers working on gender issues in agriculture have often blamed the lack of gender-disaggregated data for the underestimation of women's contribution to agricultural production (Dixon 1982). A collection of papers on farming systems research in Africa, Asia, and Latin America (Poats, Schmink, and Spring 1988) argued convincingly for the collection of gender-disaggregated data and proposed methodologies for collecting such data for farming systems research and extension. Most of the data derived from this approach are not based on nationally representative sampling frames but can be treated as complementary to large-scale household surveys because of the detail they provide at the farm and even the plot level.

New data sets have also become available as a result of program evaluations—PROGRESA is one such example. Where programs are designed to affect individual outcomes such as health, nutrition, or education, evaluations of such programs will naturally collect individual-level, and thus, gender-disaggregated, indicators. Multiple survey rounds undertaken for monitoring purposes also yield panel data sets for future analysis.

Although the evidence rejecting the unitary model is growing, the body of research from which generalizations can be drawn has been limited. Since the diversity of social structures makes generalizations difficult, few studies have been replicated over a range of conditions and cultures (Haddad, Hoddinott, and Alderman 1997). One could question, for example, whether the results of these studies are invariant to the policy regime the household faces. Moreover, there are clearly other factors that affect intrahousehold allocation, such as the existence of extended family, community, and other social groups. More important, it is worth asking whether existing empirical work in economics adequately captures the specific cultural contexts in

which individuals within households and families make decisions. Most household surveys, while collecting information on individual outcomes, often are not designed to collect data with which to characterize decisionmaking processes.

Qualitative Methods and the Contributions of Other Social Sciences

Qualitative methods have contributed new tools and perspectives to the new generation of intrahousehold research. Anthropologists and other social scientists have long challenged the unitary view of household behavior (see, for example, the papers in Dwyer and Bruce 1988). The non-economics social sciences have also long studied the other factors that affect intrahousehold allocation in different cultural contexts. All four high-concentration studies included a parallel qualitative study, although the timing of the study in reference to the survey rounds differed across countries. Qualitative studies were also undertaken in a number of the other countries.[5]

What have qualitative methods contributed to the study of intrahousehold issues? Qualitative data denote the presence or absence of a characteristic, unlike quantitative data that measure the degree to which the feature is present (Chung 2000, 337). Qualitative data are usually collected by means of repeated, intensive interviews with a small number of respondents in their natural environment. These studies have contributed to the research process by helping researchers gain a broad understanding of the culture and community at the outset, for purposes of identifying important features affecting the research questions. Using qualitative techniques before the first round of the quantitative survey has helped generate hypotheses to be tested;

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[5]A set of 15 village studies (Bevan and Pankhurst 1996) using qualitative methods was undertaken by anthropology students from Addis Ababa University in all our Ethiopian sites, about the same time that the three-round panel survey was conducted in 1994/95. The 1997 survey drew heavily from the qualitative studies. In Bangladesh a qualitative study on the gender impact of new agricultural technology (Naved 2000, Chapter 12, this volume) was conducted between the third and fourth survey rounds. A study on shocks and coping behavior in South Africa was conducted by an anthropologist before the second round of the panel survey in KwaZulu Natal (Cross, Mngadi, and Mbhele 1998). In Guatemala a qualitative study and an operations research evaluation of the community day-care centers were conducted before the quantitative survey (Ruel 2000). Qualitative studies were also conducted in Indonesia (Frankenberg and Thomas, Chapter 4) and Mexico (Adato et al., Chapter 30).

improved the language and relevance of survey questions, and helped researchers employ codes and categories that reflect "local domains." This practice has had the added benefit of building rapport with community members to learn about local perceptions and to incorporate these definitions into the survey questionnaire.

Qualitative methods have also helped researchers to use concepts defined by the respondent, or within the respondent's culture, such as the concept of a "household," the multiple meanings of income, assets, expenditures, gifts, food, dowries, and inheritance, among others. The focus on assets at marriage in the IFPRI research, for example, reflects the contributions of Guyer (1997) as well as our findings in the field. The iterative nature of qualitative research, plus the respect given to "emic" constructs, has helped researchers modify their research questions and even their approach to the issues (Gittelsohn and Mookherji 1997).[6] Qualitative methods have also helped operationalize constructs into measurable variables. One basic choice, for example, is whether to retain an emic perspective in this process (using locally determined definitions) or to recast the constructs into the etic perspective of economics or any other discipline. For purposes of comparability, we mapped many emic concepts into their corresponding etic terms—for example, when we used lists of assets at marriage suggested by the qualitative work to draw up a quantitative survey module that then elicited information on both the quantity and values of assets at marriage from respondents.

By returning to the field with interim model results between rounds of the quantitative survey, the research team was able to confirm, modify, extend, or reject some of the interim conclusions and interpretations. This process enabled the research team to refine the quantitative questionnaire and introduce new quantitative modules in later rounds if necessary, as we did in our high-concentration studies. Finally, qualitative studies have provided a way to validate the quantitative results. By providing general and specific insights into the study communities and culture, the qualitative study has facilitated the interpretation of model results (see, for example, Adato et al., Chapter 30).

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[6]Anthropologists distinguish between two ways of looking at human beliefs and behaviors: etically and emically. These distinctions were first introduced by anthropological linguist Kenneth Pike (1967) and debated by Harris (1979). "Etic" refers to the interpretations of human beliefs and behaviors from the outsider's (the investigator's) point of view, whereas "emic" refers to the interpretation from the insider's (the respondent's) perspective.

Key Findings

The IFPRI intrahousehold research program has produced the following key findings:

1. Households do not act as one when making decisions. In an overwhelming majority of cases, we reject the null hypothesis that men and women's resources have the same effects on household decisionmaking. Our results thus support a nonunitary model of household behavior.
2. The collective model predicts that the distribution of resources depends on an individual's bargaining power within the household. The distribution of power and resources within the household, however, almost always favors men. The inequality in resource distribution between men and women has both economic and social consequences, although the specific consequences will differ across countries and cultures.
3. Increasing the resources controlled by women has beneficial effects in a number of areas. In agriculture, a redistribution of resources in favor of women increases yields or leaves them unchanged, meaning that equity gains can be achieved without sacrificing efficiency. Improvements in women's status and increases in the resources that women control raise allocations toward education and improve child health and nutrition. Social networks may also be an important resource that women can use to help mitigate the impact of adverse shocks. Lastly, investment in women, particularly in education, is key to poverty reduction and improved incomes for families as a whole.
4. Protecting women's entitlements implies that their rights should be enforced. Enforcement is not automatic when customary rights and statutory rights are not consistent. Despite legal reform, what often matters is how laws are interpreted and implemented at the local level. Local custom, however, can evolve in response to changing economic incentives.
5. A new generation of policies and programs has explored innovative ways to increase resources in the hands of women. These initiatives include credit programs targeted to women, programs designed to increase girls' educational attainment, community day-care programs, and income transfers targeted to women, among others. These programs have had positive effects on women's earnings and decisionmaking ability, as well as on child nutrition and educational outcomes.

This section reviews these findings in more detail.

Differential Effects of Men's and Women's Resources

Application of a common methodological framework to a number of countries provides further evidence to reject the unitary model of the household, whether outcomes are at the household level (Quisumbing and Maluccio, Chapter 3), the plot level (Alderman et al., Chapter 8), or the individual level (Quisumbing and Maluccio, Chapter 3; Smith et al., Chapter 6; Hallman, Chapter 17; Adato et al., Chapter 30). The rejection of the unitary model has implications for the design of policies designed to transfer resources to households: the identity of the transfer recipient does affect the ultimate outcome of the intervention. Across countries, the most consistent effect is that relative resources controlled by women tend to increase expenditure shares on education, but the mechanisms through which men's and women's resources affect individual outcomes differ substantially across the case studies. The differential effect of parental resources on children of different genders provides further evidence that households in developing countries are not operating within a unitary framework.

The Distribution of Power and Resources within the Household

The collective model predicts that bargaining power determines the share of resources allocated to an individual within the household. Although the concept of bargaining power is elusive, there has been progress in measuring some of the determinants of bargaining power. The chapters in Part 1 explore different dimensions of measuring bargaining power within the household: assets at marriage (Quisumbing and Maluccio, Chapter 3), spheres of decisionmaking (Frankenberg and Thomas, Chapter 4), divorce law (Adam, Hoddinott, and Ligon, Chapter 5), and relative status within the household and within society (Smith et al., Chapter 6).

Regardless of the measure chosen, the distribution of power and resources within the household almost always favors men. In four countries—Bangladesh, Ethiopia, Indonesia (Sumatra), and South Africa—Quisumbing and Maluccio find that men bring more assets to marriage, in terms of both physical and human capital, than do women. Smith et al. use data from 40 Demographic and Health Surveys in developing countries to construct an index of women's relative decisionmaking power within the household and of societal gender inequality. They find that women tend to be less educated than their husbands, with the difference being greatest in South Asia and the smallest in Latin America. Women marry at younger ages in South Asia and at older ages in Latin America. Differences in the preferred numbers of girls

and boys by region are similarly largest in South Asia and smallest in Latin America, and it is also in South Asia where boys are most preferentially treated with respect to preventive health care. This evidence suggests that son preference may be greater in countries where women have lower status. Based on these measures, Smith et al. ranked countries in terms of women's decisionmaking power and societal gender inequality. Women have the lowest status in South Asia, followed by Sub-Saharan Africa, and then Latin America and the Caribbean.

Gains from Increasing Women's Control of Resources

If the unitary model of the household is correct and all resources are pooled, then the issue of whether the man or the woman controls household resources would be irrelevant. The chapters in this book, however, show not only that the effects of men's and women's control over resources differ, but also that increasing women's control of resources or decisionmaking power has favorable effects on a number of important outcomes, such as education, child nutrition, and women's own well-being. Reducing inequalities in human capital, physical capital, and current inputs between male and women farmers in Sub-Saharan Africa has the potential to increase agricultural productivity by 10–20 percent (Alderman et al., Chapter 8). The greater a woman's asset holdings at marriage, the larger is the share the household spends on children's education (Quisumbing and Maluccio, Chapter 3). In Bangladesh a higher share of women's assets is associated with better health outcomes for girls (Hallman, Chapter 17). And improvements in women's decisionmaking power within the family and society can significantly reduce child malnutrition rates (Smith et al., Chapter 6).

Women may invest in other forms of capital besides physical assets. Social capital—features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit—differs across men and women. Evidence from South Africa suggests that women's social capital networks are wider than men's but mobilize fewer resources. Women's contacts also tend to be among women, and men's among men. Returns to men's and women's social capital appear to be identical in terms of their effects on household welfare (proxied by per capita expenditure), although household welfare is more responsive to women's social capital because of the higher level of women's participation in groups (Maluccio, Thomas, and Haddad, Chapter 18).

Finally, investment in women's education has among the farthest-reaching effects. One of the biggest sources of agricultural productivity increases could lie simply in providing universal primary schooling to women

in Sub-Saharan Africa; simulations using data from women farmers in Kenya suggest that yields could be increased by 25 percent if all women attended primary school (see Chapter 7). An earlier study by Smith and Haddad (2000) using cross-country data found that increases in women's education have made the greatest contribution to reducing the rate of child malnutrition, being responsible for 43 percent of the total reduction. Improvements in women's status, proxied by the ratio of female to male life expectancy, make up 12 percent. Improvements in food availability came in a distant second to women's education, contributing 26 percent to the reduction rate. Where women do not face barriers to nonfarm employment, investments in girls' schooling result in higher probabilities of employment in the nonagricultural sector and higher lifetime incomes (Quisumbing, Estudillo, and Otsuka, Chapter 33). Where such barriers exist, the returns to women's education in rural areas will remain low, further dampening parental incentives to invest in girls' education. Programs that provide income transfers to increase girls' school attendance may have far-reaching effects on women's status by equalizing women's and men's human capital. There may be added benefits as well: in Bangladesh, there is some evidence that the Food for Education Program led to delayed marriage, with important implications for women's life opportunities (Arends-Kuenning and Amin 1998, cited in Smith et al., Chapter 26).

Protecting Women's Rights to Property and Other Resources

In the last 20 years, the gender gap has been closing in many areas. Improvements have been greatest in increasing opportunities to invest in and make use of human capital but smallest in assuring women's rights to property and other forms of natural and physical capital. Legal and institutional frameworks provide the basis for women to legitimately lay claim to all these types of assets. Property rights are especially important in determining women's fallback options should they be divorced or widowed—and indirectly, their bargaining power within marriage. In Ethiopia, for example, the share of household assets—land and livestock—that a woman brings to marriage is a key determinant of her share should the marriage end in divorce (Fafchamps and Quisumbing, Chapter 23). Moreover, whereas many countries have promulgated statutory laws to reform discriminatory customary practices, they have often had unintended effects or were never implemented. If women are poor and uneducated, they may not be aware of the provisions of the law.

New crops and technologies that increase the demand for women's labor in agriculture may improve their bargaining power and strengthen their claim

over land, as illustrated by the experience of cocoa farmers in western Ghana (Quisumbing et al. 2001a, also see Chapter 24). Such trends can be supported by legislation that strengthens women's land rights. Men and women should be equally qualified to acquire land titles. Women also need to be made aware of their legal rights and empowered to claim them. Attempts to increase women's incomes or agricultural productivity, however, by equalizing land rights of men and women will succeed only if other constraints faced by women, such as lack of access to credit and other inputs, limited access to extension services, and low levels of education, are also addressed.

Programs and Policies to Increase Women's Resources

Public policies to increase women's resources and improve women's status are of two types: (1) policies that aim to eradicate discrimination and (2) policies that promote more active "catch-up" in women's status by explicitly targeting women (Smith et al., Chapter 26). Evaluations of the latter type of program have shown that they can be effective in improving not only woman-specific outcomes such as earnings (Ruel et al., Chapter 31) and decisionmaking power and status within the household (Adato et al., Chapter 30), but also child-specific outcomes such as diet (Ruel et al., Chapter 31), child nutrition, and a whole range of other outcomes (Skoufias and McClafferty, Chapter 29). Moreover, unless evaluations are undertaken with a broad set of outcome indicators and deliberately elicit participants' own views, it is easy to conclude that the success of programs targeting women is limited, when the true impact of the intervention was on a process that evaluators did not intend to measure. For example, the evaluation of the technology transfer programs in Bangladesh found only modest contributions to household income (Bouis, Chapter 10). But it was not the vegetable technology package but credit from the nongovernmental organization (NGO) that increased women's bargaining power within the household; opportunities to earn income outside the home strengthened women's position in society and the community (Naved, Chapter 12). In the evaluation of a large income-transfer program in Mexico (Adato et al., Chapter 30), the findings from the qualitative study were essential to correct interpretation of the results from the quantitative study. The changes brought about by the program were too subtle to be captured fully by the quantitative questionnaire, even if the quantitative analysis found that the program significantly affected couples' decisionmaking in a few key areas. At the same time policymakers need to be aware of the unintended consequences of interventions—impact on time use and child care, for example (Paolisso et al., Chapter 14; Cooke St. Clair,

Chapter 15)—that may result even from an intervention that was designed with intrahousehold allocation processes in mind.

The effects of public policies to eliminate discrimination are more difficult to evaluate over the short term. A longer-term perspective is essential. A study that tracked gender differences in land inheritance and education over three generations in Ghana, the Philippines, and Sumatra shows that, over the long term, policies to eradicate discrimination may increase lifetime incomes for women and provide benefits to their families (Quisumbing, Estudillo, and Otsuka 2002, Chapter 33). As more panel data sets become available, researchers and policymakers will be able to examine the extent to which reducing gender inequalities has enabled individuals and households to improve their well-being over time. The future holds much potential for further work along these lines.