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ESA Working Paper No. 11-10

March 2011

Agricultural Development Economics Division

Food and Agriculture Organization of the United Nations

[www.fao.org/economic/esa](http://www.fao.org/economic/esa)



# Intra-household bargaining, gender roles in agriculture and how to promote welfare enhancing changes<sup>1</sup>

December 2010

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**Abstract:** This paper investigates the meaning of female empowerment and presents the argument why empowerment is needed. Empowerment is treated as a process which does not stop with empowerment per se, but also looks at what is eventually done with the increased agency. The paper finds that women are generally more constrained than men with regard to access to productive resources such as land, credit or information. Women also face inequalities in the labour market. These inequalities come at a cost to women and other household members. Female empowerment is particular beneficial for children's health, nutrition and education. The paper finds that gender inequalities are widespread and that it is important to consider women's multiple roles as mothers, wives, farmers, entrepreneurs and agents in political life. Moreover the paper presents experiences with, and empirical evidence of, empowerment and its potential effects. Although empowerment can yield positive effects for other household members this result is not automatic but depends on the economic and social environment and the incentive structure which help determine women's achievements. As yet there is no comprehensive theory of all these factors making project planning and policy design difficult.

**Key words:** Intrahousehold bargaining, gender, empowerment, agriculture.

**JEL:** D13, J16

**Acknowledgement:** I am grateful for the helpful comments and suggestions made by participants at the SOFA writers' workshop, Sept. 2009, Rome. I also acknowledge the valuable comments made by an anonymous referee. Any errors remain the responsibility of the author.

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<sup>1</sup> The research presented in this background paper to The State of Food and Agriculture 2010-2011, "Women in agriculture: closing the gender gap in development" was funded by FAO. The report is to be released on March 7 2011 and will be available at <http://www.fao.org/publications/sofa/en/>.

## Introduction

Gender equality and female empowerment have become major goals of development policy. International efforts to address gender inequality are reflected in the Millennium Development Goals: The reduction of gender inequality is set as a long term goal in target three. Gender inequality has many facets and penetrates all layers of society. Female empowerment is closely linked to reducing gender inequality, because it can be a means to reduce inequality and, at the same time, a consequence of lower inequality.

There is a vast literature on gender and female empowerment, mostly documenting the need for empowerment and its positive implications for women and other household members. While not doubting *potential* positive impacts of female empowerment, some authors questioned the empirical content and the generality of the conclusions drawn in the literature. This paper examines whether female empowerment leads to a win-win situation for all household members. To evaluate this, one needs to assess whether female empowerment creates benefits for women at all and whether these benefits generate positive spillover effects to other household members, particularly children.

The paper is divided into two parts: The first part investigates the meaning of empowerment and emphasizes why empowerment is indeed needed. In the second part, I present experiences with and empirical evidence of empowerment and its potential effects. Following Kabeer (1999), empowerment is treated as a process that does not stop with empowerment *per se*, but looks also at what is eventually done with the increased agency.

The latter question is important for the assessment of beneficial effects. Women are embedded in a system of institutions that define rules of action and impose incentives. Such systems differ by location and over time so that incentives can vary considerably.

Furthermore, women have intrinsic motivations that are not well understood but need to be considered in the discussion of positive spillover effects. When assessing the achievements of empowerment, the incentive structure imposed by the prevalent institutional system and the motives of women need to be understood. Much of the literature discusses images of women and men that are too narrow to capture the whole decision-making process of households. As Whitehead and Kabeer (2001) note, it must not be overlooked that apart from competing interests, households have also joint interests which in cases of extreme poverty may be the

focus of household decision-making. It is likely that projects and policies that target women's empowerment will become much more effective, if more general models would be applied and the specific situation of women and men would be considered.

## **What is female empowerment?**

Female empowerment has been discussed so frequently that the term empowerment is often used interchangeably with female empowerment (Batliwala, 2007). Nonetheless, what is often lacking is a clear and explicit concept of what is meant by empowerment and which implications it might have. In general, female empowerment is often expected to generate benefits for women, children or the household as a whole. Discussions on the benefits of empowerment, however, have sometimes a rather mechanistic view, which assumes that empowerment would almost automatically result in positive effects. Yet, when looking closer at the concept, different fallacies, inherent in the assumption, are evident.

A comprehensive definition of empowerment is suggested by Kabeer (1999) whose thinking is closely related to Sen's capability approach (Sen 1980, 1985 and 1999). According to Sen, poor people lack the capability to choose the way of life that they want to live. In this context, empowerment means to extend the set of choices that the poor can make, that is, empowerment implies an increase of agency. Agency is not necessarily limited to taking action but also includes effective resistance to actions or decisions, or even their manipulation (Safilios-Rothschild, 1982; Sen, 1990).

Rather than a static change, Kabeer (1999) considers empowerment as a process through which the poor gain more agency: a woman is empowered when she gains more options to determine her own life. Empowerment is rather a process through which one state changes into another; and each state explicitly includes the possible actions. Kabeer identifies three phases in this process: The first phase is the status quo, which refers to initial endowments, rights to control resources and options to determine household decision-making etc. This dimension includes political institutions, such as voting rights or traditional norms. In the second phase, the status quo is changing. Women may gain more control over resources, e.g. through reforms in land titling and land inheritance rights or through changes in societal norms. This is then considered as an increase in agency.

Finally, in the third phase, women are confronted with and respond to their new agency, which is termed by Kabeer as achievements. Responding to agency does not necessarily mean that women use their increased agency and that agency is beneficial to others. The term achievements may be misleading because it suggests an increase in the welfare of a woman. If women do not utilize their agency, then the effect of empowerment is zero. Furthermore, when considering empowerment in a utilitarian fashion, achievements may not result in positive effects for others, e.g. children or male relatives. Achievements may not generate Pareto efficient utility gains, i.e. no member of the society is worse off, following changes in women's agency.

## **Women and intrahousehold bargaining**

Why is it important to think about female empowerment? For a long time economic analysis did not sufficiently address intrahousehold decision-making and the impact of individual preferences on household decision-making. However, overwhelming empirical evidence and theoretical work showed that individual-specific preferences matter. Furthermore, the evidence demonstrated that men's and women's preferences systematically differ. Individual-specific preferences also have implications for the welfare of other household members, which, at least in economics, did not become apparent until new analytical techniques were developed.

Until the advent of collective household or intrahousehold bargaining models, it was difficult to include female empowerment in economic analyses. The classic economic approach starts with the assumption that household decision-making is characterized by either a single decision-maker, who dictatorially makes all decisions, or a household decision, which implies that all household members share the same preferences, views or values such that it makes no difference who in the household eventually takes decisions. In essence, this approach treats households as a single unit and individuals within the household are analytically neglected. Starting in the 1980s, this view has been challenged by Manser and Brown (1981), Horney and McElroy (1981), and later by Chiappori (1988 and 1990) and Lundberg and Pollak (1993). The models of Manser and Brown and of McElroy and Horney are based on game theory and utilize a cooperative bargaining framework based on the Nash equilibrium. In their approach, household members do not necessarily share the same preferences and try to pursue, at least partly, their own interests. The allocation of available household resources is

based on a bargaining process in which the outcome is determined by the bargaining power of household members. Bargaining power is also termed threat point or fallback position, which denote the level of utility a household member could achieve if the household were to dissolve. Lundberg and Pollak define bargaining power slightly different by stating that household members may not necessarily quit the household, but stop or reduce collaborating in the daily life. Chiappori's approach suggests as well that household members may not share the same preferences but, different from the other approaches, that household allocations are always Pareto efficient. Pareto efficiency implies that by reallocating resources no household members' welfare can be improved without lowering welfare of others. Note that Pareto efficiency does not mean *equal* distributions of resources.

An implication of the intrahousehold resource allocation literature is that household members do not pool income and finance their personal demands from their individual accounts. Duflo and Udry (2004) argue that household spending on different goods is made from individual-specific 'mental accounts', that is, women tend to spend on their children, while men favour spending on goods like alcohol and tobacco. Control over an individual account is, however, dependent on the individual's bargaining power within the household. Nevertheless, using various indicators of bargaining power, the empirical literature presents a vast number of examples where the assumption of different spending from different mental accounts has been supported. While the unitary household model has been widely rejected in these papers, tests for Pareto efficiency could not unambiguously reject efficient allocations of resources (Fortin and Lacroix, 1997; Bourguignon *et al.*, 1993; Chiappori and Browning, 1998, and; Alderman *et al.*, 1995). Many of these studies focus on the effect of changes in women's income, education or various other measures of bargaining power on household decision-making, in terms of demand for consumables and child health. Using data from various developing countries, Maluccio and Quisumbing (2003) find support for a positive correlation between indicators of female bargaining power and expenses on food and education. Kishor (2000) reports that women's autonomy is associated with improved child health in Egypt. These are only two examples of a vast number of studies dedicated to this topic (see the discussion in following sections). A general conclusion that can be drawn from these studies is that female autonomy is most often correlated with better child health, nutrition and educational outcomes.

## Determinants of bargaining power and empowerment

In view of these results, which factors determine a woman's bargaining power? Measures used in the empirical literature largely rely on a woman's fallback position that defines her range of options once marriage dissolves. Education is a widely used indicator in the literature because it increases access to information; the likelihood to find a job in the wage labour market; the likelihood of technology adoption and use etc. Another measure used is income earned because wage income is likely to be available to a woman even after a divorce. Finally, assets controlled by women have been used to approximate their bargaining power. Here, assets such as land or livestock are particularly important because these may be used as a 'credible threat', i.e. women would keep these assets after leaving the household.

Apart from economic factors, social norms determine the status of women. Social norms, however, are rarely captured by empirical studies. Norms either exist before a woman gets married or they can develop during marriage, e.g. through *ex post* justification of actions and claims. The first case is usually assumed by gender analysts, who often treat the household and its environment as given: A couple marries given a system of rules and norms to which both adhere. These norms determine the range of actions that both, women and men, can take. Adherence to norms is monitored and assured by either the partner or the peer group.

It is important to distinguish whether control is exercised by the partner or by the peer group. For example, it makes a difference whether a husband insists on his rights because he wants to keep control for himself or because of peer group pressure. In the case of peer group pressure, changing norms may be easier as people do what they think is expected of them. If peer pressure is reduced, for whatever reason, then the husband may insist less on adherence to certain norms.

If a husband wants to maintain control, norms are less dependent on the outside and likely to be difficult to change. In this case, peer group pressure may function as a mechanism to change behaviour, i.e. pressure must be increased to reduce a husband's control over his wife. The difficulties to modify such behaviour become obvious when considering the case of *ex post* rationalization: A husband justifies his claims for reasons that are not defensible on traditional grounds. Women in Kenya, for example, reported about experiences with their husbands and their husbands' families, who made claims on land and labour that were justified on the grounds of invented traditions (Davison, 1988).

## **Intrahousehold inequalities**

Literature on women in agricultural societies generally reports wide ranging gender inequalities which limit women's opportunities to generate income, to express their will, to make choices, etc. (Blackden and Bhanu, 1999). When analyzing gender inequalities, it is important to note that women have multiple roles: mothers, wives, farmers, entrepreneurs and agents in political life. Each role requires interaction with diverse actors, who impose different demands and expectations on women. As a mother, a woman is expected to support her children; as wife she is required to support her husband; as a producer a woman may be regarded as less effective compared with a man.

Each level of interaction involves a set of customary and formal institutions that regulate the life of women. It is useful to distinguish between intra- and extrahousehold norms as they may be very different with respect to the restrictions they impose on women: On normative grounds a woman may not face any restrictions in the wider society, but may be restricted by her husband within the household. One may even distinguish further between household and family because households can comprise persons who do not belong to the immediate family. A family, on the other hand, can consist of people who do not live under the same roof (Deshmuk-Ranadive, 2005). This distinction is not adopted here. For the sake of the argument, it suffices to consider rough categories such as intra- and extrahousehold levels. Both categories become interrelated when a woman's actions outside of the household determine her bargaining position within the household. This may be the case if income from wage labor—which is regulated by extrahousehold norms—improves women's economic contribution to total household income.

Inequalities also exist between children. Girls and boys are often treated differently, and such differential treatments determine the options a girl has. Sen (1990b) argued that more than 100 million females are 'missing' owing to premature death of women and girls, whose death is often deliberately caused by withholding medical treatment from them, and the abortion of female fetuses (Haddad *et al.*, 1996; Filmer *et al.*, 1998, and; Hazarika, 2000). Rosenzweig and Schultz (1982) find a positive correlation between mortality rates of girls and wage rates for women. The authors conclude that parents consider employment prospects for girls when investing in their daughters' health. Other studies find that incomes earned by men are rather invested in the education of boys, while incomes earned by women tend to benefit girls

(Thomas, 1995). Duflo (2003) finds that pensions of grandmothers in South Africa increase the anthropometric status of girls, while grandfathers' pensions have no impact on the nutritional status of neither boys nor girls. There are also studies that do not support the assumption of unequal treatment of boys and girls in the Indian context (Deaton, 1989, Ahmad and Morduch, 1993). Quisumbing (1994) notes that in the Philippines parents transfer land to boys while girls receive more education.

### *Inequality experienced by a wife and mother*

Household tasks are generally divided by gender. This division is often very strict, i.e. women's tasks are exclusively carried out by women (Ilahi, 2000). Women are usually responsible for child care and household chores, which can be time intensive tasks, depending on the household structure and size. Time allocation studies have shown that women work significantly more compared to men, if caregiving is included in the calculation (Ilahi, 2000, and; Budlender, 2008). Sharma *et al.* (2007) find that girls work significantly more in the household *and* on the farm compared with boys in Himachal Pradesh. The additional work burden limits women's capacity to engage in productive activities which often require a minimum fixed time before being profitable. Furthermore, the nature of tasks such as caring for children requires women to stay near their home. This limits opportunities to enter wage labour markets. Time scarcity forces many women to invest into cottage industries, like the production of handicrafts, which are often characterized by low returns and limited growth potentials (Lanjouw and Lanjouw, 2001). Since household chores are regarded as female tasks, the current opportunity cost of girls' schooling time is higher compared to boys, provided that boys do not help out on the farm.

Owing to the division of tasks, social or environmental changes affect women and men differently. HIV/AIDS, for example, increased the time spent caregiving for sick relatives and raising and fostering children (Addati and Cassirer, 2008). Deforestation leads women to collect firewood from sources further away from their home (Kumar and Hotchkiss, 1988; Nankhuni, 2004) which is more time consuming. Likewise, changes in public health care systems may free women's time that would otherwise be spent to care for sick children. However, the empirical evidence does not support this relationship yet: Studies have not been able to establish a significant relationship between women's time use and sickness of children (Schultz and Tansel, 1997; Ilahi, 1999; Pitt and Rosenzweig, 1990).

The particular situation of women as household heads needs to be considered in the context of intrahousehold inequalities. The incidence of female-headed households increased over recent years owing to migration and the high prevalence of HIV/AIDS (UN, 2009). Even though female-headed households are generally not poorer compared to male-headed households, the complexity of this household category does not allow for straightforward conclusions. Households can be female-headed for various reasons; widowhood being the most important one. One may further distinguish between *de jure* and *de facto* female-headed households. The former refers to households in which women are the main decision-makers (such as widows, separated or single women), while the latter category describes a household in which the husband has outmigrated. Studies often find that *de jure* female-headed households are poorer compared with *de facto* female-headed households (Horell, 2008; Chen *et al.*, 2005, and; Sender, 2003) because *de facto* households can buffer income fluctuations through remittances. Widows have a particular difficult stance in many societies as the status of a woman is often defined through the husband. In societies where customary land rights prevail and where access to land is channelled through marriage, women may lose cultivation rights with the death of their husband. It is reported that husbands' families demanded land, which was initially given to the husband (Davison, 1988). Since the marriage ends with the death of a spouse, families claim back land because land is considered as being transferred to a son and not to his wife.

#### *Inequality experienced by a female farmer and entrepreneur*

Women are restricted in their access to productive resources such as land, agricultural inputs, and extension services. Particularly land, a major input in agricultural production, is disproportionately controlled by men in all regions of the world (Agarwal, 1994; Deere and Leon, 2001, and; Quisumbing *et al.*, 2004).

African agriculture is characterized by a division of labour, where women and men individually control plots of land. In addition, couples may work on joint land. For a long time it was believed that women produce subsistence crops, while men cultivate cash crops. In accordance with such patterns, crops were categorized as women's and men's crops. However, women increasingly engage in commercial farming (Doss, 2002; Spring, 2000). It remains true however that women play a crucial role for food security in Africa, and elsewhere. But, because access to land is restricted (Agarwal, 1994; Deere and Leon, 2001, and; Quisumbing *et al.*, 2004), appropriate technologies are lacking (Blackden and Bhanu,

1999) and natural resource management is affected by insufficient land rights for women (Meinzen-Dick *et al.* 1997) women's contribution to agriculture and food security is constrained. Female-headed households may be facing particularly severe constraints.

Land cultivated by women tends to be smaller and of lower soil quality compared to men (Jackson, 1985). In many African regions customary land rights regulate intrahousehold access to land. As land markets are often lacking or underdeveloped, marriage is still one of the most important channels to gain access to land. In many societies, men inherit land from their fathers or receive land as a gift during marriage. Women often do not receive land, neither through inheritance nor as a gift. However, a husband is expected to share land he receives with his wife. Shared land gives cultivation rights to women, but does not imply control over the land, because women cannot sell land without the permission of their husbands. Gender inequality in access to land is formalized in some countries. For example, Article 59 of the Tanzanian Marriage Law Act forbids women to sell land without permission of their husbands, even if it is under their direct control.

Restricted access to land also affects women's ability to obtain credit because banks often require land as collateral (Migot-Adholla *et al.*, 1991). A lower availability of credit implies less access to agricultural inputs such as fertilizer and pesticides. Studies observe that women receive fewer visits from extension workers compared to men (Doss, 2001a; Doss and Morris, 2001, and; Arun, 1999). Lacking information about technology improvements and their correct application hinders women to upscale agricultural production. The integration into modern agricultural supply chains was shown to significantly increase incomes (Swinnen, 2007). Compared with men, women are often receiving lower prices because traders are not adequately transmitting prices (Randriamaro, 2006).

Labour is often not allocated equally between women's and men's plots. Udry (1996) reports that in Burkina Faso women work more on their husband's plots than on their own plots. Even child labour is used more on men's plots. In some areas women have to work first on their husband's plots and communal land before they attend to the crops in their own fields (van Koppen *et al.*, 2001). Owing to their household chores women are further restricted in the time they can devote to income generating activities. Finally, income derived selling crop output is not necessarily controlled by the person who produced the crop. Even though women often contribute largely to crop production, in some countries marketing is done by men who also control the earned income (Savane, 1986).

Women are also restricted with regard to other resources. In Burkina Faso, women receive less fertilizer for their land as compared to male controlled plots (Udry 1996). Indian women often have no access to productive assets like ploughs or oxen even though they belong to both (Chen, 2000 and Sharma, 1980) and face difficulties in accessing water. Irrigation and water is often controlled by men who prevent women from participating in water committees and thus restrict their say on the allocation of communal water. While men can offer work on the canal system in exchange for water, women have to pay high fees (see Pun 2000; van der Schaaf 2000, and; van Koppen et al. 2001). Women as household heads have responded to this difficulty by taking older male sons out of school for them to take care of irrigating the fields (Pun, 2000).

#### *Inequality in the off-farm labor market*

Landless women or women whose time is not entirely used up by household chores and agricultural work often engage in wage labor or in self-employment. Gender discrimination is particularly obvious in the wage labor market where women usually receive much lower wages as compared to men (Lanjouw and Lanjouw, 2001).

As entrepreneurs, women are restricted in accessing credit which limits their potential for growth. Many women finance their business start ups by own savings or with the help of relatives or friends. A sample of Tanzanian women report, that husbands play a very minor role in financing the start ups (ILO 2003a). Women face additional sexual harassment when applying for licenses and are less likely to receive access to important inputs like water or energy. Furthermore, women are restricted in their access to transport as the public transport sector, particularly in rural areas, is not well developed. Means of transport such as bicycles, donkeys or ox carts are most often under the control of the husband and thus not available for women (Blackden and Bhanu, 1999).

The wage labor market is often characterized by gender specific occupations too. Women are reportedly disadvantaged in finding jobs outside the household, particularly regarding wage employment. Off-farm employment has been found to be a major determinant of income increases. A recent study that investigates off-farm opportunities of women and their impact on poverty reduction in 8 different Latin American countries found that improving female access to off-farm income generating opportunities significantly reduces poverty (Costa et al., 2009).

Women tend to be disproportionately represented in food processing or the textile sector. Women are also often over-represented in industries producing for exports such as textiles or electronics as has been shown for India, Bangladesh and South Korea (ILO, 2003b; Murayama and Yokota, 2008), where the export sector served as an entry point for women into the wage labor market. However, examples from Mexico, Malaysia and Singapore demonstrate that this is not a universal pattern of female employment and that the employment pattern may change over time, in favour of men (Fleck, 2001; Kusago and Tzannatos, 1998).

Furthermore, many women work in the service sector as housekeepers and in petty trade. However, such gender roles may imply opportunities for women who otherwise do not have access to wage labor. Women in Bangladesh reported that they prefer to work in sweat shops rather than to stay at home. The opportunity to work independent from home gave them self-esteem and increased their bargaining power through the income they generated (Hewett and Amin, 2000; Kabeer, 2000,). It needs to be noted, however, that these occupations are often characterized by very poor labor standards. Regarding sectors that are primarily producing for the export sector, such as textiles, electronics or some food processing industries, it has been observed that with increasing profits, women tend to be replaced by males (Fontana, 2003).

Intrahousehold inequality further affect women's capacity to reject low paid wages. If women have a low say within the household or low access to resources and household income, then women are more likely to accept lower wages. In this regard, intrahousehold inequality is further weakening a woman's position outside the household (Kapadia, 1993 and 1995).

## **Consequences of intrahousehold inequalities**

Gender inequality has a direct impact on the welfare of women, but there are further possible impacts on other household members—children in particular. The extent to which other household members are affected has been subject to some debate, particularly in the field of household productivity. However, impacts on children in terms of health and schooling have been repeatedly reported, but here too the literature provides examples in which empowerment has not brought about positive impacts for children.

*Women's welfare*

Lybbert et al., (2004), Barrett and Carter (2001) and Carter and Barrett (2006) develop an asset based analytical approach to model and analyze poverty traps. According to this framework, asset poor households lack resources to invest and thus are likely to be caught up in chronic poverty. Applying this framework to the situation of women, one may argue that poor access to assets translates into a female specific poverty trap. The application of this concept to individual family members is not without difficulties as households insure each other against poverty. However, such insurance is limited; a couple of studies have shown that couples do not insure each other against weather shocks that affect agricultural productivity (Doss 2001b; Duflo and Udry, 2004). Even though this does not imply that women are vulnerable to poverty while the husband is not, there are situations in which women are more likely to be trapped in poverty as compared to men.

The most obvious cause of a potential female poverty trap is the often found differential treatment of women and men and girls and boys in terms of health. In its starkest form, the 100 million missing women put forward by Sen (1990b) illustrates the extent gender deprivation can have. Women receive less health care and are subject to greater risks due to repeated pregnancy and the delivery of children. Lacking pre- and post-natal care leads to high maternal mortality rates—particularly in Sub-Saharan Africa where almost every 10<sup>th</sup> woman dies during pregnancy or delivery (WHO, 2006). Unequal health outcomes in terms of nutrition and anthropometric status have also been found by Behrman (1988). He finds that in pre-harvest seasons, boys fare better in terms of nutrition. However, the effect disappears during the post-harvest seasons and is only significant for lower castes.

Rosenzweig and Schultz (1982) find that survival rates of girls vary with the going wage labor rate for women which the authors interpret as evidence of the hypothesis that parents strategically invest in children. In terms of education, gender disparity is also well documented, with girls receiving significantly less education as compared to boys (Lopez-Claros and Zahidi, 2005). Lower levels of education, however, imply that girls have lower chances to escape poverty. Girls' education is also more affected by economic shocks. Compared to boys, girls are more likely to be taken out of school in response to price shocks (de Tray 1998; Gertler and Glewwe, 1992; Schultz, 1984). Rising food prices affect girls' nutrition more compared to boys (Behrman and Deolalikar, 1988).

Low say in household decision making lowers a women's capability to resist the sexual demands of her husband, which has contributed to the disproportionately high prevalence

rates of HIV/AIDS among women (WHO, 2006). Education on HIV/AIDS and prevention methods is considered as not 'feminine' and thus young women and girls do not receive adequate information (Levinson et al., 2004; WHO, 2006).

### *Household productivity*

A number of studies documented possible productivity losses arising from the unequal and inefficient allocation of resources within households. In his study on efficiency of household production Udry (1996) finds in Burkina Faso that unequal distribution of labor and fertilizer across male and female controlled plots leads to a significant loss of productivity due to decrease of marginal returns in agricultural production. Tibaijuka (1994) provides a simulation based example from Tanzania, where coffee farmers could significantly increase total output in case of efficient distribution of resources. Other examples are reported from Jones (1983 and 1986), and Smith and Chavas (1999).

As women often do not formally own the land they are cultivating, an increased agricultural commercialization may lead to the loss of access to land as men may demand the land for commercial crops. Men may drive women out of their traditional—often subsistence oriented sectors—when prices for commercial crops are rising as has happened with peanuts in Zambia (Wold, 1997), and with rice in The Gambia (von Braun and Webb, 1989). As a result, commercialization efforts may fail.

## **Effects of empowering women**

Female empowerment and gender equality can be seen as a goal as such (O'Laughlin, 2007). Gender equality as equality of opportunity is a basic human right and thus should be generally targeted. However, gender equality entails more than achieving equality of opportunity. Gender equality potentially brings about positive spill over effects for other household members which are closely examined in this section. The assessment of such effects requires a careful examination of the empirical evidence and its robustness. While gender inequality can often be easily demonstrated by applying simple methods of analysis, the establishment of a causal link between female empowerment and positive spill over effects for other household members requires more methodological sophistication and is often somewhat speculative. It must therefore be borne in mind that establishing a correlation does not necessarily mean that the underlying causal mechanism is detected.

As yet, a vast literature has evolved around the effects of female empowerment.

Empowerment has been found to be correlated with greater self-esteem. Participation in the Grameen bank in Bangladesh (Pitt and Khandker, 1998; Larance, 2002) or microfinance institutions in India (Moyle et al., 2006) is correlated with greater self-esteem of women. The poverty reduction program PROGRESA in Mexico stresses the importance of women for the household and communicates this message to program participants which has been found to increase the self-esteem of women (Adato et al., 2000). Self-esteem can however be treated as a means to an end; empowerment is itself determined by self esteem such that this linkage must be interpreted in both ways.

Measures of empowerment are correlated with low levels of fertility. In many developing countries high population growth rates lead to land scarcity, high dependency ratios, and bottlenecks in public service supply such as education and health. Bankole and Singh (1998) compare data from 13 African countries and find that women generally want to stop fertility earlier as compared to men. The maximum difference between women's and men's preferences with an average of 3.9 children has been found in Niger. Female empowerment helps women to resist sexual demands of their husbands and to accomplish the use of contraceptives. Several empirical studies find support for this hypothesis (Hogan et al., 1999; Dyson and Moore, 1983; and Murthi et al., 1995; Rasul, 2008, and; Seebens, 2006).

Empowerment of women has also been found to be positively correlated to lower HIV infection rates. Through its increasingly high prevalence, particularly on the African continent, HIV/AIDS is nowadays one of the most threatening pandemics. As primarily adults and labor force participants are hit, it is to be expected that a high rate of AIDS deaths has severe economic implications for the affected countries. Here empowerment can effectively help to reduce a further spread of AIDS as women are enabled to resist the sexual demands of their husbands and accomplish the use of condoms (WHO, 2006).

Positive spill over effects from female empowerment most often fall into two classes: household productivity and improvements in the welfare of children. Particularly with respect to children the evidence appears to be quite conclusive. The results show, that women's bargaining power is significantly and positively correlated with lower child mortality (Caldwell, 1979; Schultz, 1981; Rosenzweig and Schultz, 1982, and; Thomas et al., 1990), improved child nutritional status (Behrman and Deolalikar, 1988; Behrman and Wolfe, 1989; Kennedy and Peters, 1992; Hoddinott and Haddad, 1995; Strauss and Thomas, 1998, and;

Katz, 2000), children's health outcomes (Allendorf, 2007), child schooling (Jacoby, 1994; Glewwe and Jacoby, 1994; Haveman and Wolfe, 1995; Behrman et al., 1997, and; Behrman, 1997), and household demand for food (Seebens, 2009; Maluccio and Quisumbing, 2003; Thomas, 1990, and; Thomas and Chen, 1994).

Besides the positive impact of empowerment on child welfare, it has been argued that empowerment increases household productivity. Two arguments underlie this claim: first, the acknowledgement that women are constrained in accessing agricultural inputs outside the household and second, that households distribute resources inefficiently. The studies undertaken by Tibaijuka (1994) and Smith and Chavas (1999) calculate potential productivity increases that could be generated in case of efficient allocation of agricultural inputs. Udry (1996) calculates that individual households could generate up to 20 percent more yields if inputs were allocated efficiently. For an average village, this implies an increase of 6 percent.

Unequal access to education—as a means of empowerment—has been found to exert economy wide impacts measurable through economic growth. Dollar and Gatti (1999), Klasen (2002), Knowles, Lorgelly and Owen (2002), Kalaitzidakis et al., (2002), Lagerloef (2003), and Klasen and Lamanna (2003) look explicitly at the effect of an educational gender gap on economic growth rates. All studies find a significant and negative impact of gender disparities in education on economic growth. Klasen and Lamanna (2003) look also at employment rates and find that the ratio of female to male rates of economically active people has a positive relation to growth. Accounting for further effects of the gender gap in education Klasen (2002) and Klasen and Lamanna (2003) find that inequality of education for girls and boys exerts a downward pressure on investment and an upward bias on fertility rates. Reducing gender inequality and increasing female empowerment could thus lead to significant long term effect on demographic structure and economic growth.

## **How to empower?**

A critical question in the empowerment discussion is concerning the means of empowerment. Measures that aim at empowerment need to be assessed with regard to their scope and generality. Scope and generality refer to the range of applicability which varies across different options that are available. In principle, measures that work in one context do not necessarily function in a different environment the same way. Some of these measures may

even cause adverse effects: empowerment does not necessarily lead to an increase of welfare of those who are not empowered.

In practical terms, means of empowerment are those which aim at overcoming the constraints that women are facing to make choices and which address the needs of women. This includes control over all forms of resources including economic resources such as productive assets or one's own labor power or human capital in the form of education, and social resources such as networks that back-up one's individual stand in society (Kabeer, 1999; Sen and Batliwala 2000). Empowerment can effectively improve women's fallback position in case of household dissolution. In theory, the fallback position translates into the bargaining power of women as the need to cooperate or accept household decision making declines. For example, independent labor income affects the fallback position of women, as this income can be kept in case of divorce. Working outside the household, either in self-employment or for a wage has been argued to increase women's agency (Sen, 1990; England, 2000, and; Kishor, 2000). Apart from control over resources, it has been argued that education is another means of empowerment and is frequently used as an indicator of empowerment. Education increases the exposure to information and can increase self-esteem as an educated person receives greater prestige. Furthermore, education helps to resist demand from others and helps to find employment on the wage labor market (Mason and Taj, 1987; Murthi et al., 1995, and; Sen, 1997).

A principle concern that arises in the course of empowerment is the response of the women's social environment. Regarding intrahousehold affairs, empowerment generally comes along with a shift of say in household decision making which is not Pareto efficient. That is, empowering women implies a disempowerment of men. Men therefore often resist such changes as they may fear a loss of their authority. But also outside the household, empowerment may not be welcomed by men or even by other women for various reasons. Empowerment may be considered as a break with traditional norms and may thus be sanctioned.

This has implications for the success of projects that aim at women's empowerment. If the social environment is not adequately considered, the projects may eventually fail as resistance of project opponents may be too strong (Pena et al., 1996). It is therefore crucial that efforts to improve female empowerment create a win-win situation that is immediately obvious to all participants. Implicit effects such as improved health and education of children as a result

from improved education and training of women only become visible after some years. Targeting programs at women that create only implicit benefits in the long run for other household members are therefore perceived as a danger to be opposed by men (Pena et al., 1996).

Furthermore, efforts to empower women must consider extrahousehold norms that determine women's agency. Kevane (2000) cites an example from Nigeria, where women were traditionally not allowed to engage in wage income activities. As Mason and Smith (2003) report, community characteristics may determine female empowerment substantially more than individual traits. Based on such findings, Kevane (2000) argues that changing extrahousehold norms may be more effective than increasing intrahousehold bargaining power. However, as he acknowledges himself, norms are determined endogenously which renders policy induced changes in the extrahousehold norm structure very difficult. Here again, if policies are carried out in an unsupportive environment, the implementation can become significantly aggravated and eventually even fail. Therefore, the understanding of the normative context in the given region where the empowerment policy shall be implemented is as crucial as an understanding of the enforcement mechanisms of norms.

The enforcement of norms depends on various factors: first, whether the husband insists on the norm, depends on his peer group and how they assess the importance of fulfillment of the norm. If the peer group cannot monitor fulfillment, husbands may respond differently to relaxations and changes of the norm compared with a situation in which the peer group can observe fulfillment. Second, enforcement depends on the personal interests of the husband. If the husband benefits from changing the norm, he may not oppose norm changes. Third, enforcement depends on the social and economic context. In times of economic crisis, norms may be easier to change as compared to times of relative wellbeing. Fourth, enforcement of norms may become more difficult or even easier if norms are connected, e.g. if a norm is an expression of a certain life style that incorporates a whole bundle of different norms. An unconnected norm may quickly change because not the whole bundle has to be changed.

Norms may also be conflicting as happens when customary and formal norm systems are coexisting. Formal law may grant women ultimate freedom in some areas while customary law restricts women's leeway. In Kenya, formal law allows women to own land, whereas by traditional norms, only men can have a land title (CEDAW, 2003). In case of divorce or widowhood, women often lose their claims to the land which they had under control during

marriage as the husband or his family claim the land. Formally, the woman is allowed to keep the land, while by customary law, the land is still under control of the family.

Control over resources is a means often utilized by project planners who target women's empowerment. This may be achieved through measures which directly address constraints and needs of women and by policies which rather indirectly take women into account as part of a larger development initiative. Direct measures may include

- direct monetary transfers,
- creating access to credit,
- creation of secure land rights,
- granting of access to water,
- creating awareness of rights,
- equal extension services that account women's constraints and women specific particular crops,
- increasing access to markets through forming women's groups and informing traders on women's productive capacity,
- formation of women's cooperatives, savings groups, etc.
- education and training of women.

Indirect or more general measures may include issues from which women do not benefit exclusively but which still loosen the constraints that they face:

- social safety programs,
- investment in time saving rural infrastructure,
- setting of prices and taxes (e.g. prices subsidies for crops that are primarily cultivated by women, may have an adverse effect on their incomes).

Direct and indirect measures may come in different forms: either through projects which may also be conducted by NGO's such as credit or training programs or through policy measures such as the creation of equal and secure land rights for women and men or public investment in time saving rural infrastructure. Both measures need careful design to ensure effective empowerment. A few attempts to achieve female empowerment are discussed in the following.

### *Land rights*

The titling of land is important to secure women's access to land and to set incentives for investing in agricultural intensification. Reducing tenure uncertainty has been reported to increase the adoption rate of improved agricultural technologies (Besley 1995). Through a system of land titles, women can also get the opportunity to actively participate in the land market, either as land lords or through renting in land (Quisumbing and Pandolfelli, 2009). Land ownership appears to improve female empowerment. Various studies document a positive correlation between land ownership and women's say in household decision making (Allendorf, 2007; Agarwal, 1998, and; Mason, 1998). Allendorf further finds that among households where women hold a land title in Nepal, child health and women's say in household decision making is comparatively better. Land ownership as a means of empowerment has been found to reduce intrahousehold violence against women (Panda and Agarwal, 2005). Further evidence is yielded by qualitative studies. A loan program in Gujarat gave out loans conditionally on whether husband and wife jointly owned legal land titles. The participating women reported that in turn their say within the household has increased (Unni, 1999). Agarwal (1994) reports similar findings on the effect between land rights and say from Rajasthan.

### *Microfinance*

Many productive activities require at least a minimal stock of capital. Starting up a business, investing in the growth of an enterprise or agricultural intensification requires liquid resources to finance the increasing capital stock. Due to lack of collateral, women are disadvantaged in accessing credit. Overcoming this constraint may effectively help women to engage in income generating activities or to bridge liquidity constraints. Access to finance can improve control over resources as own income generating activities can be rendered more productive. One of the first studies to investigate the impact of microcredit programs on female empowerment generally reports positive results (Pitt and Khandker, 1998): participation in the Grameen microcredit scheme in Bangladesh has increased the intrahousehold bargaining power of women.

The evidence to date on the impact of microfinance institutions and targeting on women on female empowerment is mixed. While one strand of literature points out the positive impact of microcredit institutions on female empowerment, other authors stress that microfinance institutions have rather amplified existing gender inequalities.

### *Public transfers*

Policies can provide various means to empower women through direct transfers. The transfers need to be secured in a way that women are really the recipients and further that they can freely decide on what to do with the money. In the case of projects such as PROGRESA the direct money transfer to mothers as opposed to fathers has effectively helped to improve education and nutritional status of children which were explicit goals of the project. The program was implemented in Mexico in 1997 as part of an overall public effort to sustainably reduce poverty. Mothers of school age children received money transfers in exchange for ensuring the school attendance of their children. The strategy to improve the nutritional status of children consisted of various components including training of mother, nutritional supplements for small children but also monetary transfers to purchase food (Skoufias and McClafferty, 2001). Further measures were aimed at increasing the health status of children. Even though the program was explicitly targeted at increasing the current and future welfare of children, the program also worked to empower women. First through the direct money transfers which came directly under the control of women and second through emphasizing the important roles women occupy regarding household welfare. Even though the program appears not to have altered household decision making processes per se, women were not required to ask their husbands for money in case of additional purchases. Furthermore, the opportunity to leave the house for training and the associated interactions with other women contributed to an improvement of self-esteem (Adato et al., 2000).

The example of PROGRESA shows that female empowerment can be achieved if clear targets are formulated and rules are transparent. The direct money transfers of women brought more resources under their control and increased women's independence.

#### *Women's groups*

The formation of women's groups is an effective way to improve exchange of information and to generate social capital. Women's groups can have various functions: as production cooperatives, savings associations, marketing groups, etc. However women's groups may also carry disadvantages for women not part of the group. In Rajasthan, women's groups have been formed to collectively lease land from land owners possessing excess land (Rajan, 1990). These women groups turned out to be quite productive such that women were hired from neighbouring villages.

#### *Women overcoming the constraints*

Despite significant gender inequality in many regions in developing countries, it is almost surprising to observe various examples in which women are achieving significant agricultural yields. Studies have shown that women farmers are not necessarily doing worse than their male counterparts. For example, Bindlish and Evenson (1993) and Bindlish et al., (1993) find, for a sample of Kenyan farmers, that female headed households are not less productive compared to male headed households. The productivity comparison of male and female headed households has brought differing results: in some instances authors find female headed households less productive (Saito and Weidemann, 1990; Saito et al., 1994), while others cannot establish significant differences in productivity (Bindlish and Evenson, 1993; Moock, 1976) or adoption rates of modern technologies (Doss and Morris, 2001). In Malawi, women were even found to be more likely to adopt modern technologies like fertilizer (Minot et al., 2000). Spring (2000) finds the same among Kenyan female and male farmers. Even though, some of these studies are subject to statistical problems (see Quisumbing, 1996), it seems that it is not possible to draw an ultimate conclusion on the productivity differences between female and male headed households.

In view of these results, it is important to ask for the underlying reasons. Gender inequality may be region and context specific. Despite the problems that many women are facing in acquiring access to land, loans or credit, more and more women have found ways to effectively solve and circumvent these problems. For example, Spring (2000) reports that Kenyan women pool their land parcels (to generate economies of scale), organize themselves into ROSCAs, utilize farmers' associations and groups. Women have built up and utilize their own information networks and obtain information through stockists and traders selling inputs to women. Due to lacking storing capacities, women have switched over to selling small quantities. Buyers in Kenya buy directly from women and pay in cash on the spot (Spring, 2000). Particularly contract farming seems to be a promising approach for women as many inputs such as seeds, pesticides, and fertilizer are provided through the contracting firm which spares the need of women to have land titles in order to access credit. However, some caution is in order as the results from agricultural commercialization have shown, as discussed in section 5.

Women increasingly engage in commercial farming and sell food and cash crops on the market. In some cases, women even benefit from gender roles and the constraints they are facing otherwise. Contract farming has provided opportunities to include women in high

value supply chains. The private sector has occasionally reported that it is easier to work with women, that women produce higher quality export crops compared with men. Another approach that has been pursued is that women pool their land in order to meet minimum land endowment requirements to start silkworm production. Input dealers have also adjusted to the need of their customers and sell inputs, e.g. fertilizer in Kenya in small packages of 1 to 2 kilograms, even though the Kenyan law prohibits opening the 25 kilo bags before selling. The small packages are suited to women farmers who are often cash poor or need only small amounts (Spring, 2000).

Bindlish and Evenson (1993) find that extension services in Kenya are not gender specific, that is, female and male headed households are equally visited by extension agents. Governments have responded to the extension problem by appointing female extension officers as in the case of Tanzania (Due et al., 1997).

#### *Endogenous norm changes*

In cases where land is scarce and marketing opportunities are rare, men tend to dominate the control over land to the disadvantage of women. Climate change is particularly problematic in this respect, as the increase of temperature and the decrease of rainfall intensity will turn more land into marginal areas thus sharpening the conflict over land. Such conflict is likely to reinforce gender norms which keep women accessing land.

Roos and Gladwin (2000) report an example from Northwest Province in Cameroon, where the local ethnic groups have experienced a constant decline of soil fertility from the 1950s onwards. The majority of households in this area indicate that they face food insecurity even though coffee is widely being produced to generate cash. It is notable, that in this area, gender norms are very strict and women are generally excluded from possessing land. Coffee is a common cash crop, but is primarily grown by men. We find a similar pattern in the Far North Province of Cameroon where bushland is turned into agricultural land leading to a process of surface loss and a significant decline of soil fertility (Wassouni, 2006). Urban markets are far away and cash crop production is limited to cotton production which is marketed through a government agency. Here as in Northwest Province, women are largely excluded from access to land.

The picture regarding women and agriculture is very different in the West province where women can inherit land and even purchase it. Even though, population pressure has turned

land into a scarce resource, the soil is very fertile and the region is characterized by a temperate climate. Coffee is an important cash crop, but in the course of the fall of coffee prices, households have increasingly turned to cultivate and market food crops. This has opened further opportunities for women farmers, who were able to sell their produce to traders. What distinguishes West Province from the others is that population pressure is high, land is fertile but scarce, and marketing occurs in a rather decentralized manner where traders can easily access the region and transaction costs are low (Roos and Gladwin, 2000; Wassouni, 2006).

Other examples of the evolution of land rights that favor women are reported by Quisumbing et al., (2001). Among the Akan in Ghana, land has been transferred from husbands to wives even though this has not been traditional practice. The transfer was conditioned on women and children helping the man in planting cocoa trees on his own fields. The labor intense cocoa farming has increased women's bargaining power and improved their control over land.

## **Fallacies**

Despite many potential positive effects emerging from female empowerment, policies that aim to empower women are not necessarily the panacea for reducing gender inequality and for generating welfare improvements for other household members. Three general problems need to be considered before formulating policies: (1) female empowerment has not always led to the expected results of greater welfare for other household members. (2) Policy measures targeted at female empowerment have not always brought about real empowerment and rather induced negative effects for women (3) the studies documenting gains from female empowerment and losses from inefficient resource allocation need to be interpreted with some care.

### ***Unexpected results and intrinsic motivations***

Other than the overwhelming evidence on female spending on children, the motives out of which women do care more for children are still unclear. Haddad (1999) lists a few conjectures: (i) women may care more for children, because due to birth, raising and caring for children, women have much closer emotional ties, (ii) social norms may determine women to devote a greater share of food to children, (iii) women are resource constrained and thus

treat healthy and educated children as an insurance against old age poverty. As women are usually younger than their male partners, old age support needs therefore to come from the children (Nugent, 1985). One may object to this last proposition that some studies have shown that not the identity, but the sex of the income earner matters for child nutrition. Djebbari (2005) reports, it is not only the mother who cares, but also female relatives. The author finds that nutritional status of children increases with the income of *any* female household member and not only with that of the mothers. However, similar old age security considerations may be at work here as well.

If the old age security argument holds true, the provision of a social safety net may have adverse effects on child care. The same holds true for issue (ii): if norm systems are changing, women may not feel primarily responsible for children anymore. Such norm changes can be caused by economic development itself. If wage labor markets develop and female participation increases, it may cause women not to accept the major burden of child care anymore. An increase of female agency does then not automatically lead to an improvement of welfare of children or other household members.

An increase of agency may in these cases not necessarily lead to a reduction of gender discrimination as agency might be part of the problem itself (Sen, 2001). Agency would then possibly put women into the position to exercise discrimination. According to Sen, neither in India, nor in China, Singapore, South Korea or Taiwan has increased female education and labor market participation eradicated unnaturally high mortality rates among girls. A similar result is reported by Smith and Byron (2005) who find that increased female decision making power has not eradicated parents' preferences for boys in northern and western states of India. In these states, higher bargaining power even increases discrimination against girls.

These considerations show that the intrinsic motivations of why women act the way they do may be key for the success of empowerment efforts that intend to generate spill over effects. However, as of now, these motives are not yet well understood. Much of the evidence is presented so as to suggest that an automatism is at work, which is unlikely. The arguments presented often disregard personal goals and treat women as if they were per se altruistic. A recent experimental study conducted in Uganda contradicts this assumption. The study shows that women are not willing to contribute more to common pool resources as compared to men and even that women received higher benefits from their husbands than they themselves were willing to contribute themselves (Iversen et al., 2006).

Adding to the complexity, Thomas (1990) finds that women in Brazil favor girls, while fathers favor their sons. Analyzing data from Bangladesh, Hallman (2000) reports a reduction of girl mortality rates in case if women exercise higher bargaining power. On the other hand, women's bargaining power is not significantly related to boy mortality. Pitt and Khandker (1998) found among a sample of women who participated in the Grameen microcredit program that fertility rates of participating women who started a business were even higher as compared to non-participating women, even years after the program has been launched and first credit have been taken. Pitt and Khandker interpret this result in terms of increased labor demand for the start ups of women. The relation between labor demand and fertility has been observed in other regions as well: Yilma et al., (2008) report for Ghanaian families that fertility rates were higher where irrigation systems had to be maintained and financed through off-farm labor.

It should also be noted that women's individual interests do not necessarily equate to *gender interests*. Women do not necessarily showing solidarity to women from other social strata. There are reported cases in which claims to land rights for women were opposed by other women. Such opposition can be found in societies where strict social hierarchies prevent identification with persons that belong to another social stratum. In Jharkhand, India, women from upper castes have been strongly opposing the allocation of land rights to women from lower castes (Rao, 2005).

How do women respond to changing environments in terms of changing prices, norms, etc.? Changing prices for energy dense food may illustrate that such 'environmental' changes may not necessarily generate positive spill over effects. In the course of development, nutrient demand changes which has implications for the nutritional status of adults and children. In the so called nutrition transition, increases of household income are followed by a decrease of food prices—usually energy rich foods (Popkin, 2003). The transition of food demand patterns in the course of development leads to over-consumption of energy rich food leading to an increase of overweight and obesity prevalence rates. If women's income increases, food demand patterns may change, too. In view of the increased rates of obesity observed in many developing countries, female empowerment may lead to rather adverse effects in terms of increased overweight children.

A phenomenon that has emerged only recently in developing countries are the so called *dual burden* households. These households are characterized by the coexistence by an overweight

adult—often a woman—and an undernourished child. Prevalence rates vary across countries but range between 5 percent in Tanzania to up to 16 percent in Brazil (Garret and Ruel, 2005). Research on dual burden households is still in its infancy, however the results could be interpreted in a way that casts doubt on the stated child oriented expenditure of women.

The discussion shows that gender differences are context specific and thus can change in response to a changing environment. Policy planners need to consider these environments in order to frame incentives in a way that they create sustainable empowerment and spill over effects. Men are not necessarily egoistic as well as women are not necessarily altruistic which is summarized by Guyer (1988) with the following statement: “It matters who gains control of output because women and men have different spending preferences, not necessarily because they hold different values but because they are in structurally different situations.”

### ***Difficulties in interpreting the studies***

#### *Productivity*

Much of the evidence on the negative impact of intrahousehold inequalities on agricultural productivity is based on a couple of widely cited studies. One of the most important has been published by Udry (1996) who analyzes data collected from 150 households located in 6 different villages in Burkina Faso over the years 1981 to 1985. The results show that these households inefficiently allocate agricultural inputs such as labor and fertilizer across their fields, whereas women controlled plots receive significantly less inputs compared to plots which are under male control. Due to decreasing marginal returns to inputs, Udry concludes that some households could raise output by about 6 percent with a re-allocation of resources, while an average village could achieve an output increase of 13 percent. The results of this paper are important in at least two respects: first, they suggest that households from this area violate the assumption of a Pareto efficient allocation of resources within households. Second, the results show that women are disadvantaged in terms of receiving fewer inputs for their plots.

Even though the paper has been very influential, the results need to be treated with some care. Akresh (2008) provides a robustness check of the results and redoes the analysis building on a nationally representative data set. When restricting the sample to the same region where Udry has carried out his research, Akresh confirms Udry’s findings. However, when enlarging the data set by including more geographical regions, the results differ from those of Udry.

Inefficient resource allocation can only be found in the area covered by Udry. Furthermore, the finding of Pareto inefficient resource allocation is dependent on the economic situation of the household. In years in which a weather shock occurs, Pareto inefficiency declines in the affected households and disappears among the poorest. Affected households start to allocate more labor towards female controlled plots to avoid income shortfalls.

O’Laughlin (2007) criticizes Udry’s work in terms of the measures applied. The results of Udry’s study crucially depend on the identification of control over the plot. The difficulty in the ICRISAT data is, however, that ownership cannot be uniquely identified. This is problematic as in Burkina Faso part of the family plots are jointly cultivated and traditionally more labor is allocated to these common plots. According to O’Laughlin, Udry classified jointly cultivated plots as male controlled plots thus creating a bias in the results. Given the criticism of O’Laughlin and Akresh, the results from Udry need to be interpreted with some caution as the robustness and generality of the study appears to be questionable.

Jones (1983 and 1986) investigates the effects of a rice irrigation scheme in Cameroon that aimed at improving rice production through intensification. After investigating a sample of 24 married women and 12 women heading a household, Jones’ concludes that women were opposing the scheme as they are not adequately compensated by their husbands for the work they reallocated from sorghum to rice. As a result, total household production remains below its possibility frontier. O’Laughlin notes that other interpretations are possible. Differences between married and unmarried women may be due to greater engagement of unmarried women into rice as this might be the main income source. Furthermore, O’Laughlin criticizes the sample size which is too small to draw any general conclusions.

### *Children*

Many studies suffer from methodological weaknesses and the findings reported often reflect correlations rather than causal relationships. Sample selectivity is seldom addressed, statistical models suffer from unobserved heterogeneity and omitted variable bias, and the results are at times not interpreted within the relevant context. This in addition to the mixed results reported from various studies, casts some doubts on the conclusion that many authors draw: female empowerment unambiguously leads to a welfare improvement of all household members.

All of these measures are subject to econometric problems which cannot be easily solved. Bargaining power of women as measured through education, income or control over assets

may rather reflect a matching women and men at marriage. Marriages may form on the basis of certain characteristics as for example having more education on the wife's side and being more open with respect the woman's status on the husband's side. That is, men may seek for educated women only when they are themselves open to the idea of female autonomy. Such openness may further grant women more freedom in household decision making. The measures of bargaining power would thus reflect openness of the husband and an associated low level of resistance to female autonomy. Income earned by women is a measure that may reflect the personality of a woman. If a woman, through her personality, already has sufficient control over household resources, she may not see any need to generate income outside the household (see Thomas and Chen, 1994). Personality is in any case an important variable that is hard to capture in studies on household decision making which primarily utilize secondary household survey data. Furthermore, regarding the control over assets, it is not certain that women maintain control after divorce. Being aware of such problems, authors have looked for other measures of bargaining power such as geographical spread of traditional norms that grant women more autonomy (Dercon and Krishnan, 2000) or for possibilities to explicitly model marriage matching (Schultz, 1994; Foster, 2002).

### ***Adverse effects on women***

#### *Microcredit*

In numerous developing countries, microcredit programs have been implemented to enable poor households to get access to financial resources. In many countries, microcredit programs have particularly attracted women, in part because these programs have been exclusively targeted at women. However the effects on female empowerment of these programs have been mixed. In various cases, women take credit on behalf of their husbands. Programs intended to empower women created the opposite effects, where men use women to access credit (Armendáriz and Roome, 2008). In the African context, Mayoux (1999) finds that through the involvement of women in income generating activities, men even withdrew their income from the household pool and let women carry the major bulk of household expenditure. In this regard credit programs have even led to the disempowerment of women. In other cases, credit was used to pay for capital investments that eventually required more labor input. Women were then forced to work on their husband's land.

However, when assessing the overall impact of microcredit schemes on female empowerment, the context again needs to be considered. In South India, the participation in a

credit program as such does not affect intrahousehold decision making. However, when controlling for accompanying program components such as social group intermediation, Holvoet (2005) observes a significant shift of bargaining power favoring women.

### *Land titling*

The introduction of land titles to ensure private property of land has often come at a cost for women, particularly in the presence of an established system of customary rights. In such an environment, the implementation of a land titling scheme means that an entirely new system is imposed on the current institutional environment. As land ownership is most often not clearly defined (and I note that access rights do not imply ownership) such a scheme opens the door for a change of the institutional set up that eventually discriminates against women.

In Kenya, the introduction of a land titling system ultimately led to the loss of secure access to land, as men were registering all family land under their names. Even though women were customarily granted access and cultivation rights over the land, the legal ownership now often lies with the men.

Transparent land registration is therefore needed, to ensure that cultivation rights eventually lead to control rights over land. In Ethiopia the land registration has been successful in terms of sustaining women's access to and control over land. Various measures have been implemented to ensure the proper functioning of the system. For example, at least one woman had to be a member of the committees responsible for land registration, thus introducing control on equal treatment of women, but also local knowledge on the process of the intrahousehold allocation of resources.

A further problem that has been recently noted by Deere et al., (2009) is that ownership is not necessarily equal to control. They compare decision rights and ownership status of land for several Latin American countries. In Nicaragua, for example, women are reported land owners in 16.9 percent of the households. However, they were decision makers with respect to agricultural production in only 8.8 percent of the cases. The interpretation of this result is not straightforward. Making decisions on agricultural production does not necessarily equate to the right to sell the land. Women and men may engage in different sectors, e.g. while men may be entirely responsible for agricultural production, women may work in the off-farm sector. Despite this problem, the findings points to possible divergence of ownership and control status.

## *Education*

Schultz (2001) points to the possibility that gender roles may have a reversing effect of female education. If women tend to work in occupations that are considered as women's activities, then an increased supply of educated women may reduce wages in these sectors. The increase of female education may therefore need to go hand in hand with an increase of jobs either suited to women or with the loosening of the treating occupations as being gender specific.

### **What to do?**

From a project perspective, it is necessary to consider the operational part where goals are formulated and tools are designed. The planning must be based on the knowledge of the underlying mechanisms that induce the intended changes. If these are not sufficiently considered, the projects may fail. The knowledge base regarding positive spill over effects appears to be relative robust for many different environments. However, this knowledge is based on rather static perspectives. The effects of changes of the incentive structure, e.g. through the introduction of social safety systems and increased participation in the labor market is yet unknown.

The discussion shows that programs targeted at female empowerment need to be adjusted to the specific context. Pena et al., (1996) conclude in their review of projects targeted at women and female empowerment that the explicit consideration and beforehand identification of relevant and context specific gender issues can improve the success potential of a project. Addressing gender issues may entail the granting of access to resources. Other than experiences from other countries, the land certification scheme in Ethiopia has been comparatively successful in ensuring women's access to land (Deininger et al., 2007). The councils giving out the titles were required to have at least one female member which ensured that female interests were represented.

The Ethiopian example shows that the representation of women's interests in the public domain can work to channel women's interests. Other measures can target the protection of women's interests. For example the introduction of a bank in Malawi that hosts small scale savings and that comes along with a biometric card that allows only the card holder to withdraw money from the account. Furthermore, the account can be opened without an identity card which is lacking for many people in rural areas. As yet, the bank has been

successful in attracting women who opened bank accounts in great numbers (Cheston 2007, cited after Quisumbing and Pandolfelli, 2009).

Particularly, the inclusion of men has often yielded positive effects and rendered the efforts effective. Examples include family planning programs (Dodoo, 1992; Bankole and Singh, 1998; Mesfin, 2002, and; Short and Kiros, 2002) which failed as long as men were not part of the program. If information on family planning methods was spread entirely among women without consideration of their partners, the programs were largely unsuccessful even though women were quite open to the use of contraceptives. Similar results are reported from Armendáriz and Roome (2008) who find that the inclusion of men in the Chiapas credit program led to greater success of the project.

## **Conclusions**

There is no doubt that women are in many cases more constrained as compared to men in their access to productive resources, such as land, credit, or information. These problems are severe and should not be downplayed. Female empowerment can yield positive spill over effects for other household members. This effect is well documented for various regions and different social contexts particularly for children who benefit in terms of health, nutrition, and education. However, the generality of this conclusion depends on various factors which need to be taken into account if empowerment shall lead to the anticipated results. This is particularly obvious in the discussion on household productivity where results appeared to be less robust and do not allow for general conclusions. Even though the results leave room for interpretation they cannot not be ignored as they show a real potential for misallocation of resources and resistance of women to efforts of their husbands to extract more labor.

Norms inside and outside the household, the economic and social environment and more generally the surrounding incentive structure do play a crucial role for determining women's achievements. Apart from norms, women respond to economic incentives. The structure of these is often not fully considered or entirely ignored. Even though a lot of anecdotal evidence exists, a comprehensive theory that takes account of all these factors is lacking. In view of the fact that underlying mechanisms are not well understood further research is needed to investigate motivations and responses to a changing environment.

These difficulties render the planning of projects more difficult. Key to project design is therefore a close understanding of the given environment and its current incentive structure to avoid adverse effects on women and other household members. Monitoring of the projects is a further essential ingredient to ensure that mechanisms are working in the anticipated way and to allow for changes in the program structure. Many project planners are already aware of these problems. PROGRESA has been set up as a randomized trial which allows for an optimal monitoring and assessment of the project goals and progress. Other examples show that project planners have taken account of the problems encountered in the past. However, the interventions have been taken place in a rather static environment such that complex interactions between social change and the incentive structure faced by women did not have to be considered.

The world is undergoing rapid changes and faces numerous challenges as climate change, food price increases, lower energy supply, etc. New household types have emerged through increased urbanization, migration and HIV/AIDS, which face new challenges not present before. In these times, female empowerment becomes particularly important to avoid further discrimination and a deepening of the already existing gender equality as climate change induces soil depletion, water shortages will increase land scarcity as well as pressure on local labor markets. Women and girls may be particularly affected as they have shown to be particularly vulnerable to economic shocks.

New developments in domestic and international markets also bring new opportunities for women. These new developments are often neglected in the literature dealing with female empowerment. Contract agriculture or the integration into world markets provides options to enter new product markets and to overcome input bottlenecks. Here as well, the mechanisms are not yet sufficiently understood such that a general conclusion cannot be made. Whether these developments eventually benefit women in the long run is unclear. The examples on the impact of agricultural commercialization do not reveal an unambiguously positive picture of the relation between commercialization and women's control over resources.

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