Chapter 1

Ester Boserup: An Interdisciplinary Visionary Relevant for Sustainability

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Largely unfettered by disciplinary dogma, Ester Boserup observed human-environment relationships through an expansive analytical lens. Her ideas on agricultural change, gender, and development shook up research and practice in the mid-1960s and early 1970s, and remain cogent one-half century later for the development dimensions of sustainability. In this, the 100th year since her birth, it is worthwhile to take stock of her impact on research and practice and how her ideas continue to shape and be reshaped by current research.

1.1 Background

Born in Copenhagen on May 18, 1910, Ester Borgeesen graduated as Ester Boserup in 1935 with a Candidatus Politices, a MA-level degree she described as mostly theoretical economics plus courses in sociology and agricultural policy (Boserup 1999). She worked for the Danish government (1935–1947), a period in which she gave birth to three children, and the U.N. Economic Commission of Europe (1947–1965) on agricultural trade policy. In this last capacity, she and her husband, Mogens Boserup, worked in India from 1957–1960, an experience that transformed her view on agricultural development. Returning to Denmark, Boserup took on consultancies and served on various commissions as she penned her most important works, at least two of which would have far reaching impacts on interdisciplinary research and

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real-world practice, become the subjects of intensive academic scrutiny, and lead to her award of three honorary doctorate degrees in the agricultural (Wageningen), economic (Copenhagen), and human sciences (Brown). Boserup was elected Foreign Associate, National Academy of Sciences, USA, 1989. She died in Geneva, Switzerland, September 24, 1999.¹

1.2 Agricultural Change

Boserup erupted on the international, trans-disciplinary scene in 1965 with the publication of her landmark book, *The Conditions of Agricultural Growth: The Economics of Agrarian Change under Population Pressure* (Boserup 1965). This brief, non-technical work offered a powerful set of ideas in opposition to neo-Malthusian and other prevailing ideas of the time about agricultural development. Turned down by several publishers, her book was discovered and enthusiastically embraced by other social sciences, foremost those parts of anthropology and geography dealing with (quasi) subsistence, smallholder farming systems. *The Conditions of Agricultural Growth* has been published by five different publishing houses in 17 issues from 1965 to 2008, and translated into French, Swedish, Japanese and Estonian.

The large and sustained impact of this work has at least a three-fold explanation. First, it addressed an enduring theme the relationship between population and environmental resources, which has regularly resurfaced in different expressions, at least since the work of Thomas Malthus in 1798. Boserup challenged his proposition that the relatively slow-growth in the “food ceiling” served as the upper limit for the more fast-paced, potential growth in population. She reversed the causality, arguing that increases in population (or land) pressure trigger the development or use of technologies and management strategies to increase production commensurate with demand. Agricultural intensity thus rises with population density (or land pressures in related literatures), absent constraints on the process.² Over the long run, this process transforms the physical and social (e.g., land tenure, labour markets, and other societal structures) landscapes, the historical dimensions of which Boserup elaborated in *Population and Technological Change: A Study of Long-Term Trends* (Boserup 1981).

The endogeneity of the techno-managerial strategies of agriculture was foundational to her thesis and influenced the induced innovation thesis explaining the contemporary pathways of investment in and use of agricultural technology at large (Hayami and Ruttan 1985). Despite this, Boserup’s thesis that was not well developed regarding qualitative shifts in technology (e.g., to fossil fuels) that fundamentally change land-labour and thus structural relationships in society (Krausmann et al. 2008). She did trace the broad strokes of industrial technology on agriculture in sparsely populated and underdeveloped lands (Boserup 1981), and

¹ For details on the life of Ester Boserup see (Abernethy 2005; Boserup 1999; Tinker 2004) and <http://irenetinker.com/publications-and-presentations/ester-boserup>.

² Boserup was not the first to link land (or population) pressures to intensification (Turner et al. 1977), but she was the first to set the relationship into a conceptual model specifically aimed at agricultural change. See, however, the work of A. V. Chayanov and C. Geertz noted in this text.

argued that it was not applicable to some subsistence farmers because the relative costs of labour- versus industrial-based foods favoured non-adoption of the last (Boserup 1965, p. 120). These concerns, however, were not explicitly inserted into her base thesis.

Second, Boserup's early work disputed assumptions about farming behaviour applied in development. Mirroring the ideas of the Russian A. V. Chayanov, she argued that the behaviour of subsistence farmers differed from commercial ones (Boserup 1975).³ Subsistence farmers responded to household (consumption) more so than market demand and sought to minimize risk to household needs, not maximize gain, affecting the allocation of land, labour, and *landesque* capital.⁴ Farmers shifted known techno-managerial strategies, or explored innovations in them, only if land-labour dynamics pressured them to do so. This production logic was subsequently demonstrated to be present, side-by-side or variously mixed with market behaviour, among many smallholder households worldwide (Brookfield 1972, 2001; Dorsey 1999; Netting 1993; Turner and Brush 1987).

Third, Boserup questioned neo-Malthusian and related assumptions permeating development practice, foremost that smallholder, subsistence farmers were at the mercy of their own population dynamics and in desperate need of external assistance associated with those views. Her ideas were heard and explored by major institutions involved in agricultural and rural development, including the World Bank (Binswanger and Pingali 1988; Pingali et al. 1987; Tiffen and Mortimore 1992, 1994).

Boserup's thesis remains important today for the various subfields contributing to sustainable development. Its foundations have been tested—demonstrating the ability to explain the variance in the intensity of subsistence-like cultivation—and variously elaborated and critiqued (Angelsen 1999; Brookfield 1972, 2001; Carr 2004; Lambin et al. 2000; Morrison 1996; Stone 2001; Turner and Brush 1987; Turner and Shajaat Ali 1996; Winfrey and Darity 1997). Substantial work over the past decade continues to find links between land pressures and agricultural intensification or to demonstrate the rudiments of household production logic underpinning the thesis (Carswell 2002; Demont et al. 2007; Lambin et al. 2000; Laney 2002, 2004; Malmberg and Tegenu 2006; Stone 2001; Wood et al. 2004; Zaal and Oostendorp 2002).

Influential ideas are rarely unchallenged, and so have been Boserup's. One set of critiques have focused on the paucity of attention given to societal structures and the processes underlying them for agricultural change. Boserup insisted that social structures mattered for this change and development in general, but viewed them as endogenous to changes in land pressure and technology, changing over the

³ One of us (Turner) once asked Boserup why she did not cite the 1920s work of Chayanov in her own. She replied that she had never read or heard of Chayanov at the time, and explained the close similarities of their logic to the fact that both he and she were essentially drawing on the same "school" of economic thought.

⁴ *Landesque* capital is a term employed in human, political, and cultural ecology and land change science to refer to permanent land improvements for production, such as terrace or irrigation systems, especially among non-commercial land managers.

longer-term. Neither she nor the initial research she inspired explored the variance in these structures on agricultural intensity, although other potentially important factors were. Much attention has been given to societal structures over the last decade (Brookfield 2001; Lambin et al. 2000; Netting 1993; Stone 2001; Turner and Shajaat Ali 1996), the results of which can be incorporated into the Boserup-inspired induced intensification thesis (Turner and Shajaat Ali 1996).

Induced intensification envelopes a constellation of research that has explored the roles of environment, gender, empowerment-social capital, household composition, tenure, off-farm employment opportunities, ethnicity, state policies, level of analytical aggregation, and other factors on agricultural intensification under different land pressures (Abizaid and Coomes 2004; Börjeson 2007; Coomes et al. 2000; Kabubo-Mariara 2007; Keys and McConnell 2005; Murton 1999; Shriar 2001; Stone 2001; Stone and Downum 1999; Wood et al. 2004; Zaal and Oostendorp 2002). Relaxing assumptions imposed in Boserup's scheme, this research reveals the conditions leading to the process of land expansion (Malmberg and Tegenu 2006; Pascual and Barbier 2006; Place and Otsuka 2000; Tachibana et al. 2001) or land abandonment and migration (Ananda and Herath 2003; Demont et al. 2007; Gray and Kevane 2001; Reenberg 2001; Stone 2001; Turner and Shajaat Ali 1996) versus intensification. This brings us back to the original, enduring theme and articulation of those conditions leading to Boserupian, Malthusian, or other outcomes (Geertz 1963).

1.3 Women in Development

Drawing on field observations in India but blossoming during her subsequent experiences in Senegal, Boserup challenged development research and practice yet again with the release in 1970 of *Woman's Role in Economic Development* (Boserup 1970). Her thesis was so obvious in hindsight, it is somewhat difficult to understand why it was so challenging. Women have always been an important component in the practice of agriculture beyond the corporate-commercial farming systems of the world, and yet their consideration was missing in economic theory and development practice of the time. Boserup argued that western-led development reduced the status of and opportunities for women. Her challenge to rectify this omission is credited, even by her critics (Aikman and Unterhalter 2005; Arun and Arun 2002; Benería 2003; Datta Gupta 2002; El-Bushra 2000; Jackson 2002; Lind 2003; Patel and Parmentier 2005; Singh 2006; Vazquez Garcia 2001), with helping to inspire the United Nations Decade for Women (1976–1985). Indeed, the United Nations Development Programme distributed a summary of her book at the first World Conference on Women held in Mexico City in 1975, the U.N.'s International Women's Year. A digest version of her book was also prepared by the U.S. Agency for International Development (USAID) and distributed to all U.S. embassies. Boserup not only anticipated gender studies, or at least their application to development, but set strong analytical standards for engaging the multifaceted realities of this research and provided the foundation for the Women in Development (WID) perspective. WID has received so much attention that development practice has lost sight of men,

according to some views (Bannon and Correia 2003). *Woman's Role in Economic Development* has been released by five publishers in seven issues from 1970 to 2007, and has been translated into French, Spanish, Italian, Swedish and Indonesian.

Boserup and WID observed that women were discriminated against at all levels of the development process in the 1960–1970s (Peinado and Céspedes 2004). Boserup and WID did not reject the modernization effort for this omission. Rather, they argued for women to be made an explicit part of the development program, while paying attention to cultural variations regarding women's productive roles. Drawing on historical data, Boserup argued that economic development created a gender gap (female equity) that evolved in a curvilinear manner. Modernization initially enlarged the gap owing to economic changes that disintegrated established household relationships, but subsequently closed it, especially owing to increased women's education. It is this facet of WID that continues to draw considerable research attention. Some field-based tests support the proposed curvilinear relationship, or parts of it, while other studies suggest a linear relationship in which the gap is not closed (Datta Gupta 2002; Forsythe et al. 2000; Hannum 2005; Matthews and Nee 2000).

Almost in passing, Boserup speculated in the conclusion of *Woman's Role in Economic Development* (Boserup 1970, p. 224 f.) that increased education for women in the developing world might reduce family size. This observation thrust Boserup into the U.N. World Population Conference in Bucharest in 1974 and subsequent international programs addressing population. Interestingly, demographers would subsequently demonstrate that drops in the fertility rates worldwide track with the level of women's education (Becker et al. 2010; Caldwell 1980).⁵

WID and Boserup continue to draw attention from alternative views within gender studies at large. Critique holds that WID is, at its base, a “neoclassical economic construct” which is insufficiently nuanced and too focused on questions of education within the modernization paradigm (Aikman and Unterhalter 2005; Basu 2002; Benería 2003). WID, is accused of failing to consider domestic production, isolating reproductive from productive work (Benería 2003; Onyejekwe 2004; Silvey 2001). If this challenge is applicable for WID, it seems odd to extend it to Boserup, if only by implication. After all, her agricultural interests were directed to household or domestic production, and her gender gap is predicated on understanding that modernization disrupts established household gender roles, which includes reproductive and productive elements. Regardless, these and other critiques gave rise to Women and Develop (WAD) and Gender and Develop (GAD) counterviews.

Both WAD and GAD view women as active agents in the production and development process, and reject their former omission in the modernization project as inadvertent (Benería 2003; Onyejekwe 2004; Parpart 1993). WAD champions a socioeconomic class view in which unempowered men share the same unfavourable fates in the development process as do most women. This shared position, WAD argues, changes only if international social structures change. GAD, in contrast, views the roles assigned to both sexes not as given but as a social construction, and thus the organization of women in changing their roles is a central issue in development. The

⁵ Critiques of the fertility-education relationships remain, however, e.g. (Basu 2002).

inequalities of modernization must be addressed through structural changes, specifically political ones, because the institutions discriminating against women may be impervious or highly resistant to economic development (Aikman and Unterhalter 2005; Benería 2003; Parpart 1993; Silvey 2001). Recent studies treating themes embedded in WID, WAD, and GAD suggest that elements of all three are useful for the question at hand (Chithtalath 2006).

What might have been Boserup's response? First and foremost, she was versed in both normal science and critical theory. While her professional lens was large, she remained firmly anchored in science and attempted to enlarge or expand economic analysis rather than replace its science base with alternative explanatory perspectives. Boserup explicitly recognized the role of societal structures in the development process. She differed from WAD and GAD positions, perhaps, in that she viewed structural change as taking place over the long term and as endogenous to the development process: "structures change under the influence of other structures although they may be resistant to such changes for shorter or longer periods, and are changing only when the pressure is strong or persistent" (Boserup 1999, p. 58). Boserup encouraged economic development research to incorporate this broader and historical view, even providing a framework for it (Boserup 1996).

1.4 Appreciating an Innovative Scholar

Few social scientists of the last half of the twentieth century can match the impacts that Boserup has had on interdisciplinary research and outreach-practice, especially regarding human-environment relationships in development context. Indeed, an even smaller number have drawn the attention of researchers and scholars holding such a large range of world views. Without writing a formula and rarely constructing a diagram, her conceptual or "informal" models of agricultural change and women's role in development have been formalized, tested, and retested, and remain significant for research and practice.⁶ Her insights were gained by a comprehensive observational lens, the parameters of which were not bound by disciplinary tenets. As she noted, long-term development analysis must be "... interdisciplinary and their authors need to follow major developments in some other disciplines than their own" (Boserup 1999, p. 59). In this sense, Boserup's approach remains as important for contemporary sustainability science as do her theses about the sustainability dimensions of agricultural change, women, and development.

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⁶ In 1996 Robert W. Kates encouraged Boserup by letter to employ diagrams to illustrate her concepts more clearly. Her last publication of which we are aware (Boserup 1996) did so.

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