Moseley, William G., Matthew A. Schnurr and Rachel Bezner Kerr (Eds). 2016. *Africa's Green Revolution: critical perspectives on new agricultural technologies and systems*. New York: Routledge. 136 pp. ISBN 978-1-138-18595-1; £90/c.US $140 (hbk, lower through resellers).

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In a recent call for a new Green Revolution in the US, Sharp and Leshner (2016) claimed that "[n]ow, more than ever, we need to embrace 21st-century science, fund it and turn it loose so we can develop better methods of putting food on the table." Berry, Jackson, and Berry (2016) responded by fervently criticizing Sharp and Leshner for their ignorance of the serious negative ecological and social consequences of the Green Revolution, calling attention to their remarkable omission of farmland or farmers in their article about agriculture, and concluding that "…even eminent scientists, who propose to improve agriculture exclusively by scientific research and technological innovation with no regard for land and people, know little about agriculture." For them, the solutions to agricultural problems lay in the traditional methods of farmers that are both more ecologically sound and socially just than Green Revolution technologies.

This recent debate epitomizes a long-fought and ongoing battle between the proponents and opponents of the Green Revolution approach to agricultural development. Proponents are on the technical and scientific side, focusing on Green Revolution technologies and their positive effects on crop yields, whereas opponents take the critical, livelihood stance with an emphasis on the negative ecological, social and economic effects of the technocratic, productionist and seemingly apolitical agenda of the Green Revolution. *Africa's Green Revolution: critical perspectives on new agricultural technologies and systems* locates itself on the critical side of this battle. Based on a special issue of the *African Geographical Review*, this edited volume brings together contributions that problematize the New Green Revolution for Africa by examining its effectiveness as a strategy for increasing crop yields and alleviating poverty on the continent.

The opening chapter serves as its introduction, providing a brief overview of the Green Revolution for Africa, covering its political-historical background, its actors, rationale, overall approach and characteristic elements, and setting a skeptical tone for the remaining chapters with respect to the potential of this philanthrocapitalist-neoliberal approach to improve household food security for African farmers.

Employing fieldwork methodologies and drawing on locality-based case studies in several Sub-Saharan countries, the contributing authors of four chapters (Ch. 2, 3, 4 and 8) focus on various agricultural technologies and market strategies within the framework of the Green Revolution for Africa and analyze their socio-economic impacts on smallholder farmers and lower-income urban dwellers. In this context, Bornstein evaluates the seed-saving and seed-selling practices of high-yielding rice growers in The Gambia (Ch.2), Nyantakyi-Frimpong and Bezner Kerr examine the effectiveness of input-intensive agricultural technologies within the agro-ecological context of Northern Ghana (Ch.3), Peyton, Moseley and Battersby explore the effect of the formal Western supermarket strategy on food security/insecurity in the hybridized (formal and informal) economies of lower income neighborhoods in Cape Town, South Africa (Ch.4), and Ruby and Bellwood-Howard study the effect of soil fertility management and access to credit markets on farmers' livelihoods and sustainable agro-ecological practices in Northern Ghana (Ch.8).

With the exception of Bornstein (Ch.2), the authors reach similar conclusions. They emphasize that it is necessary to rethink the African Green Revolution due to its exclusive focus on productivity, its reliance on technological fixes and high-input agriculture, its insensitivity to social differentiation and farmers' agency (Ch.3), its overall commercial thrust and market-oriented strategy for food security (Ch.4 and Ch.8) and its implications for the long-term sustainability of farming in sub-Saharan Africa (Ch.3 and Ch.8).

Bornstein, on the other hand, takes issue with the critics of African Green Revolution for their conception of smallholder farmers as passive victims of external agents who control the production process under this agricultural system. He asserts that the seed-saving and selling practices of the Gambian farmers growing NERICA (New Rice for Africa) – a high-yielding rice variety introduced within the framework of the Green Revolution for Africa – "…do not correspond with narratives portraying NERICA as a pernicious threat to smallholder autonomy" (p.9). Contrary to experts' recommendations that they plant new seed every three years, the Gambian NERICA growers maintained existing agronomic practices, continuously re-

planting their seeds and selling them to farmers from other villages, thereby minimizing farmers' dependence on off-farm input dealers (pp.9-10). That NERICA farmers thus retained control over their production process and defied the inevitability of capitalist penetration into agriculture led Bornstein to conclude that "…to conflate agricultural technology transfer with an inexorable commodification of the seed is to overlook the farmer's agency in constructing the social reality of any agricultural system" (p.11).

As thought-provoking as Bornstein's claim is, his conclusion is not supported by the case he presents. The Gambian NERICA farmers' seed saving and selling practices, says Bornstein, are "…a manifestation of exactly the kind of local autonomy that food sovereignty's proponents have been advocating for" (p.9). He then states that these practices "*if allowed to continue* [emphasis added], can act as a guard against capital's takeover of the seed sector" (p.11). The crucial question of "allowed by whom?" is left unaddressed by Bornstein. Neither does he problematize the severe limitation of an autonomy that requires the approval of some unidentified source of authority for its continuation. Granted, Bornstein hints at the limited nature of this autonomy by supporting his claim of farmers' autonomy with cautious caveats, as when he says "farmers retain *some degree of sovereignty*", "*to some extent at least* – farmer autonomy …. can indeed co-exist with technological change in rice agriculture" and "the farmer-led NERICA system has, *under certain conditions*, the potential to entrench vibrant peasant agriculture" [emphases added] (p.11). However, these limitations remain in the background of his main argument - implied, rather than acknowledged as significant. This, in turn, contributes to the failure to recognize that farmers' autonomy in the case of Gambian NERICA seems to be achieved, not as much due to the *success of farmers* to assert agency as it was due to the *failure of the NERICA program* to be put into full practice there. By disproportionately focusing on farmers' agency at the expense of structural factors (such as political will, economic incentives, administrative and legislative measures) in evaluating the outcome of Green Revolution technologies Bornstein runs the risk of reaching the misleading conclusion that in cases where farmers depend on external actors in their production processes - like those Nyantakyi-Frimpong and Bezner Kerr (Ch.3), and Ruby and Bellwood-Howard (Ch.8) observed in Northern Ghana - their lack of autonomy is because they failed to assert agency.

Although Bornstein's conception of the impact of Green Revolution technologies on farmers differs from that of others in the volume, he and other contributors share an *emphasis on context-specificity* as a common thread. The significance attributed to context, and the concomitant call to consider the various geographical, agro-ecological, political, economic, and social contexts in designing, implementing, and evaluating any agricultural and food policy, stands out as an overarching theme encompassing all the chapters. To that effect, Nyantakyi-Frimpong and Bezner Kerr (Ch.3) criticize the generic agricultural development policies relying on uniform technological fixes, and conclude that "…agrarian intensification should involve not only a simple transfer of technology, but should be sensitive to the local context and social relations of production" (p.30). Peyton, Moseley and Battersby (Ch.4) call attention to the context-specific implication of the geography of formal food retail for the food security of poor households. Acknowledging the need for contextualized development policies, Jones, Schnurr, Carr and Moseley (Ch.5) suggest long term work in the field as a means of supporting such policies. Along similar lines, Ruby and Bellwood-Howard (Ch.8) stress the importance of context-specific solutions. One of the main points of their criticism of the African Green Revolution (AGR) is that it fails to live up to its claim to recognize the importance of context specificity. Taking issue with its current implementation "…as a package in a hegemonic fashion" (p.121), Ruby and Bellwood-Howard argue that AGR's rhetoric of choice and site-specificity "…is not always borne out in practice. The approach, when implemented as a package, is not, therefore, able to facilitate the livelihood choices that would benefit all farmers" (p.110).

In addition to the scholars of political ecology of agricultural development, the current volume will also benefit agricultural policy makers and NGOs working in the Sub-Saharan African context. The emphasis of the authors on the context-specificity of agricultural development programs promises to provide a corrective to policies implemented as a one-size-fits-all package deal, and the case studies presented provide a better understanding of context-specific implications of agricultural technologies within the framework of Green Revolution for Africa.

References

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