

The Ethics of Intensification

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The Ethics of Intensification

Agricultural Development
and Cultural Change

 Springer

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*Dedicated to Don Ihde, my Doktorvater,
who escaped Kansas.*

*It has been my lot to ensure that he does
not entirely escape the farm.*

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Paul B. Thompson

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Introduction

The Ethics of Agricultural Intensification: An Interdisciplinary and International Conversation

Paul B. Thompson and John Otieno Ouko*

Global agriculture faces a number of challenges as the world approaches the second decade of the third millennium. Predictions unilaterally indicate dramatic increases in world population between 2010 and 2030, and a trend in developing countries toward greater consumption of animal products could multiply the need for production of basic grains even further. Although global food production in 2000 was estimated to be adequate for the existing population, hunger and malnutrition are persistent problems that have led decision makers to recognize that increasing food production in specific regions may be the most effective way to address food security for impoverished peoples. At the same time, there will need to be policy adjustments that improve poor people's access to current food supplies without simultaneously undercutting the ability of local producers to obtain needed cash income. What is more, the uncertain effects of global climate change on agricultural ecosystems complicate planning for this process, while poorly understood processes of globalization create additional unknowns from the side of social systems. In short, despite surpluses in many parts of the developed world, finding ways to increase food production on both selected regional and a total global basis remains a priority for many farmers, policy makers and agricultural researchers.

There are essentially two routes to adjusting total food production on a regional or global basis. Extensive approaches focus on the total amount of land being used to support agricultural production, while intensive approaches focus on technology and the organization of labor being deployed on a fixed amount of land. A commitment to maintaining existing farming methods and ways of life implies that adjustments will be made by bringing additional land into production. But with total arable land coming into increasingly short supply across the globe, it becomes critical to examine the ethical issues that are raised on a global basis by following the route taken in most industrialized economies: using technology to irrigate, fertilize, and otherwise manage agricultural production, allowing broad and persistent increases in per hectare yields. The essays in this volume start that conversation on ethical issues.

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Understanding Intensification

As Clive Stannard's contribution to this book discusses in some detail, the Food and Agriculture Organization (FAO) of the United Nations began to recognize the need for an explicit and planned effort to address ethical issues in agriculture more than a decade ago. The theme of agricultural intensification was one of several that FAO selected for coverage in their series of ethics papers. This volume grows directly out of efforts undertaken at FAO. Chapter 1 reprints the FAO Ethics Paper on agricultural intensification, while several other chapters are structured as the author's reaction to it. But the very idea of intensification is problematic. As will be discussed at several intervals throughout this volume, framing the future of world agriculture in terms of a choice between intensification and continued expansion of the land base dedicated to food and fiber production is itself an ethically contentious way to proceed. On the one hand, the future of agricultural production will almost certainly involve both of these strategies. New lands can be brought into agricultural production in some parts of the world, and climate change may introduce additional possibilities for adjusting land use. On the other hand, some observers would argue that describing changes in terms of intensification only obfuscates the ecological, economic and technological drivers of change. When obfuscation conceals exploitation, it becomes ethically problematic in itself.

In fact, the decision to frame this issue in terms of intensification was made within FAO itself. It was made against the backdrop of widespread recognition of the need to confront a division of opinion within FAO about the legitimacy of directed change in farming technology and in the policy environment guiding farmer decision making. The question might be posed thusly: Is it ethically legitimate for an agency such as FAO to undertake projects intended to change the way that people farm? If so, what ethical principles should guide these projects? If not, what justifies a posture of failing to do things that could be understood as an ethical imperative to aid poor and hungry people? While there are indeed issues that are unique to the kind of international organization that FAO is, the real interest here was in the ethics of *any* agency undertaking such activities, whether it be a government, an inter-governmental organization, a charitable foundation, a civil society group, or indeed, a for profit corporation (or a well-endowed individual). In other words, the goal was to spark a conversation about the ethics of the act, not the peculiar characteristics of the agency that undertakes it.

Parties within FAO and its constituencies recognized that the very word 'intensification' was a potential source of confusion and debate. As noted above, ever since antiquity farming and pastoral peoples who needed more food and fiber have gotten it by expanding their land base. That is, by simply increasing the amount of biological input they achieved more output in the form of consumable goods. But the agricultural producers of antiquity also deployed other means, such as using more water (irrigation) or applying nutrients, usually in the form of animal manures. What is more, ancient farmers recognized that adding more labor in the form of careful hand weeding, better tillage or improvements to drainage can also add a

boost to the amount of food and fiber commodities they harvest each year. All of these strategies can be construed as ways of increasing inputs in order to increase outputs. All of them are components of traditional farming systems, yet only the first need necessarily involve an increase in the land base on which a given community relies. So defining intensification as an increase in commodity yields per acre can be a very misleading indicator, and one that fails to capture what this conversation needs to be about.

But other terms also have the potential to mislead and to take the conversation off course. For some, the debate centers on “the Green Revolution,” understood as the application of modern agricultural science to the farming methods being deployed by farmers in the developing South. But for others, this phrase refers to a specific initiative launched by the Rockefeller Foundation after World War II, gradually developing into the Consultative Group on International Agricultural Research (CGIAR). While the essays that follow do not neglect this initiative or the debates over its legacy, a narrow focus on this activity would not only be somewhat backward looking, it would also neglect the profound impact that national governments and private firms have upon the mix of agricultural production methods, tools and techniques. The term ‘industrialization’ suffers from similar but perhaps even more extreme difficulties. Does it imply that decision making will be in hands of multi-national corporations? Certainly many of those who advocate some directed program of scientific research, technological innovation and adaptive management (i.e. intensification) want no part of decision making by multi-national corporations. (Though, of course, others would concede that they will play a role, in any case.) These issues on the role of private capital broach yet another debate, discussed below as well as throughout the volume.

Though there remain important topics to debate within these contested issues, there was a juncture within FAO’s internal discussions on the ethics project where it was decided that it was more important to go ahead and begin this conversation than to continue a seemingly endless search for the perfect terminology with which to have it. Such is and always has been the inherent nature of a philosophical debate. Terminology is imperfect and inherently misleading, but the importance of the issues at hand demands an exchange of views, nonetheless. The essays and title of this volume operate within the legacy of that framing decision, and while all the authors in the volume recognize the conceptual limitations and potentially controversial implications of a phrase like “the ethics of agricultural intensification,” all have accepted the need to go ahead and have this conversation, even while we continue to debate the words and concepts with which we will have it.

As the chapter by John Perkins and documents, debates over intensification strategies in agriculture have occurred for many years. Since World War II they have often been framed in terms of the success and failures of the Green Revolution, however broadly or narrowly we understand that term, or in terms of social and environmental costs associated with intensification strategies in the developed world. Until comparatively recently, these debates were not framed in terms of ethics. That is, although protagonists clearly held values, their values and value orientations were often implicit and were almost never articulated in the terms of an

explicit ethical perspective. Thus, while the word ‘intensification,’ gives rise to one set of difficulties, the word ‘ethics’ gives rise to another.

Understanding Ethics

When discussion of benefits, risks or human rights was introduced into the debates reviewed by Perkins and Jamison, these concepts were almost never defined or specified as involving systematic ways to approach and understand social goals or normative expectations. The 20th century debates over intensification, in short, exhibited little cognizance of the way that philosophers and social theorists working in ethics and political philosophy had attempted to frame concepts such as benefit, risk or human rights within comprehensive theories. Neither did they engage with emerging philosophical discussions on the ethical standing of the natural environment or non-human animals.

But to insist that such debates *should* utilize constructions and ideas developed by philosophers and social theorists is also to make a very contentious statement. One source of controversy resides in the training and mindset of people who have had formal training in agriculture and applied social science disciplines. Studies by Glenn L. Johnson (1976, 1982), Jeffrey Burkhardt (1997, 1999) and Robert Zimdahl (2006) have concluded that the education and practice of professionals such as those that staff organizations such as FAO, the CGIAR, agricultural universities, national research institutes and ministries of food and agriculture is deeply imbued with the philosophy of *positivism*. Philosophical positivism is a belief that scientific method and technical innovation can be broadly applied in solving social problems. Positivists since Auguste Comte (1798–1857) have denigrated the ability of humanistic, religious and interpretive traditions often associated with the word ‘ethics’, but the specific version of positivism referenced by Johnson, Burkhardt and Zimdahl evolved from the writings of physicist Ernst Mach (1838–1916) and was given definitive formulations in Vienna and in the United Kingdom during the decades before World War II. This philosophy held that the subjective nature of moral beliefs made them inherently incapable of demonstration and unsuited to rational disputation. Ethical claims were said to be “meaningless,” hence ethical values have no place in science. The view was short lived in academic philosophy, as it was quickly recognized that the statement “Ethics have no place in science,” is itself an ethical norm for the practice of science. To propose a philosophy of science based on such a claim would be internally incoherent. Nonetheless, the view did clearly continue to have influence amongst the scientific disciplines long after the war. Johnson, Burkhardt and Zimdahl each argue that this influence lingers in the agriculture disciplines today.

However, the positivist’s tendency to quash ethical debate receives support from purely practical considerations, as well. For one, claiming that a practice is “unethical,” can be counterproductive when the goal is to get it changed. Such talk can make people defensive and can wrongly impugn the motives of the well-intentioned.

Another problem lies in the need to engage in lengthy terminological clarification (a problem made evident by the tone of this introduction). While almost everyone thinks that they are themselves ethical people, discussing ethical norms and values is surprisingly complicated. Terminological misunderstanding begets contention, and conversations become both wearisome and acrimonious. For these inherently sound reasons, many people with practical problems that need solutions avoid discussions about ethics whenever possible.

Academic and scholarly studies in ethics are, in fact, partially a response to these very problems. Philosophers and social scientists specializing in ethics develop vocabulary for more precise and efficient ways to discuss right and wrong. Theories of ethics depersonalize debate so that a given view of what is right or wrong in a given situation comes to be understood as owing to standard or stylized approaches to the question of determining right and wrong, rather than to the ethical (or unethical) character of the agents involved in the situation. One contribution that academic ethics can potentially make to debates over intensification lies in the creation of a standardized and depersonalized vocabulary in which to discuss the competing goals, constraints and approaches that shape both thinking and action in pursuit of agricultural improvement. But while this hope of developing such a vocabulary serves as the primary rationale for this volume, it also points toward more intractable problems with our approach.

While every culture and linguistic tradition has some mode for articulating the idea of ethics and for discussing right and wrong, the modality of academic and scholarly ethics has been dramatically shaped by the history and institutional environment of the European university system. Of course, the same can be said of the agricultural sciences. Yet while the methods and findings of the sciences have come to have almost worldwide acceptance, local, national and regional traditions of ethics continue to provide authoritative sources of insight into matters of right and wrong that cannot be “trumped” or overridden by the academic theories that are the product of Western philosophy departments and the social sciences. Thus while farmers continue to know things about their local soils that have never been fully codified by agricultural researchers, this fact is not thought to compromise the authority with which a soil scientist articulates the basic principles of the discipline. Ethics does not enjoy this kind of status, and very few ethicists working in Western university environments would seek to achieve it.

FAO papers and research efforts on ethics have made attempts to reflect the broad cultural and religious diversity found among member nations and farming peoples around the world (Bhardwaj et al. 2003; Macer et al. 2003). Unlike these efforts, the paper on intensification was specifically intended to draw upon ethical theories and approaches as they are currently understood by academic philosophers and social scientists. This volume, too, has been conceptualized in that mold, though every contributor recognizes that this represents a limitation on the very idea of ethics. Indeed, the last quarter of the 20th century saw widespread change within academic ethics, as numerous scholars challenge the Euro-centric perspective of the leading traditions in ethical thought. Theorists of race and colonialism offered penetrating critiques of the way that academic ethics valorized power and property, and feminists suggested an

implicit “phallogocentrism” or privileging of the male perspective. Thus it is quite reasonable to argue that the philosophical tradition informing both the FAO Ethics Paper on agricultural intensification as well as the commentary articles that follow is itself undergoing radical transformation and revision.

It would have been inherently desirable to involve a much broader range of cultural as well as theoretical perspectives in the exercise that has culminated in this volume. Well developed philosophical traditions exist in Asia that are completely missing from this volume. Latin American philosophy is, like that of the North, deeply influenced by the European tradition, yet it has developed its own style and orientation, represented here by only a single contribution from Luis Camacho. African philosophy has made strides toward the recovery of an authentic scholarly voice silenced during the colonial era, but again, the present volume includes only one example: John Ouko’s adaptation of critiques of the Green Revolution. One could also argue that many voices from the European tradition itself are also missing. In fact, the limiting factors that eventuated in the less desirable outcome that this volume represents are practical rather than ideological. The contributions needed to be in English, for example, and there were no funds for translation.

For the most part, however, the shortcomings must be laid at the feet of the editor. Although I had substantial help and advice throughout the planning and preparation of this volume, there eventually came to be time when the obvious need for more far flung and diverse perspectives was overcome by my own limited imagination, contacts and energy, especially as the imperative for bringing the work that had already been contributed by others to fruition. Hopefully others will regard this volume as the beginning of a conversation, and will take up pen and paper to join in.

Ethics and Agricultural Intensification

As such, the perspectives represented within these covers strike a balance between diversity and systematic coverage. Chapters by Luis Camacho, Stephen Esquith and Nigel Dower each situate this volume within the emerging tradition of “ethics and development,” while Claire Palmer, Michiel Korthals and Peter Sandøe each employ recent ideas developed in environmental philosophy. The phenomenon of intensification is reasonably seen as a feature of planned development, whether it is viewed as a logical extension of publicly funded scientifically based research efforts that had their origins in England and Germany or of private sector innovation and economic growth. As noted already, and documented in this volume by contributions from Richard Bawden, Allan Schmid and Lawrence Busch, intensification has been widely debated by agricultural specialists for some time. Is there anything that philosophers can actually add to that debate?

While readers are invited to answer that question for themselves by reading the chapters, it may be useful to frame that reading with just a few more anticipatory remarks on the overall problem. In 1899, Karl Kautsky published *Die Agrarfrage*,

translated into English only relatively recently as *The Agrarian Question* (1988). Kautsky argued that innovations in agricultural production and post-harvest distribution were having the effect of allowing those who controlled the technology behind the innovation to gain control of the benefit stream associated with agriculture. In short, farmers do not benefit from innovation, even though they are compelled by competitive pressure to adopt innovations. Instead, innovations are actually a means for non-farmers to accumulate or co-opt some of the returns that would have gone to farmers and to keep it for themselves. Kautsky's argument expanded upon Karl Marx's analysis of the way that applying industrial principles to agriculture resulted in inevitable exploitation and depletion of the inherent productivity of land (Marx 1906).

The basic elements of this analysis have been repeated many times over the last 100 years, sometimes with direct reference to Kautsky's work (see Goodman and Watts 1997), and sometimes not (see Cochrane 1983). At the same time, the mere association of this argument with names like Marx and Kautsky may have been all the reason that ideologically inclined agricultural researchers and government officials needed to repress it. The upshot is that the debate over agricultural intensification has ideological overtones that one neglects at one's peril. Those who have accepted the basic tenets of Kautsky's analysis occupy a range of stances along the political spectrum, but they all tend to believe that unless specific measures are taken to insure against it, technologically induced efforts at intensification will benefit the rich and powerful at the expense of primary agricultural producers (who, outside the developed West, tend to be weak and poor). They also tend to see those who think that science and technological innovation are inherently progressive as at best naïve and at worst as scheming to gain at the expense of others.

Those on the other side also occupy a range of positions along the political spectrum. Some positivist-inclined scientists do indeed see innovation as inherently progressive. Some see the socialist argument as a ruse to concentrate government power at the expense of individuals. Others see increases in total food production as inherently favoring the interests of the poor, and hence see the benefits of intensification as off-setting losses to those farmers who, they admit, suffer as a result. Still others are willing to discuss ways that more sophisticated approaches might either compensate losers, or at least minimize their losses. Thus it is not as if there is no middle ground in the intensification debate. Marx and Kautsky themselves were hardly opposed to technical innovation, though they were not sanguine about innovation under the basic principles of a capitalist economy.

There are numerous echoes of this fundamental debate sounding throughout various chapters in this book, but the basic point of an ethics-oriented approach has been to raise questions that are somewhat orthogonal to it. Specifically, an ethicist asks whether one sees the potential for diverting benefits from primary producers as politically justified or not, *on what normative basis does one judge?* If one takes the view that what ultimately matters is the way that change affects the welfare or quality of life for farmers (and possibly non-farmers, as well), the ethical debate will proceed in one direction. If one thinks that what ultimately matters is the fairness (or unfairness) with which these shifts and changes play out, a very different

set of considerations will emerge. Or perhaps one thinks that the cultures and ways of life lived by these farmers (and possibly others, as well) are constitutive of what ultimately matters, so that changes must be evaluated in terms of the violence that they do to the underpinnings of a worthwhile life.

The debate over intensification tends to entangle the values and arguments that have been mustered in support of one perspective on the agrarian question (or leveled against another perspective) with a perceived rooting-interest. Thus if one is “for” farmers, one sees any argument leveled in support of non-farmer interests as inherently tied to those interests, and if one is “against” government, one sees any argument suggesting a role for government as antithetical to one’s rooting interest. In contrast, an ethics-based analysis will tend to lump the pro-farmer advocate who cites a Kautsky-type argument to show that farmers are losers and the pro-capitalist advocate who says that low food prices for the poor offset these losses into the same camp. It’s their reasoning rather than their partisanship that puts them there. Both are using ethical criteria that stress the outcome or endpoint of an innovation process and that emphasize welfare or income. This would stand in contrast to someone who sees even a positive outcome for welfare and income as ethically problematic when it is brought about in a coercive manner.

The point can be made in a more direct (if also more contentious) manner as follows: For some observers of agricultural intensification, the long squabble over capitalism is everything. Those who fail to declare an allegiance in that battle at the outset are presumed to be sleeping with the enemy. Given the sensitive nature of the word ‘ethics,’ such partisans are particularly inclined to be suspicious of an approach that neither decries nor praises capitalist institutions in an overt manner. Thus, although ethical theories do indeed intersect with this debate in powerful ways, the primary thrust of philosophical ethics does *not* set out to define good and bad in terms of an allegiance or opposition to capital.

One last anecdote might also help. I serve on the Ph.D. committee for a sociology student who uses the expression “social justice” to indicate a particular ethical orientation, advocated by some and opposed by others. I tell him, no, social justice is an ethical problem that different ethical theories will address and analyze in different ways. But my admonishment is to no avail. Arguably, my student’s indoctrination in social movement theory leads him to see normative commitments solely in terms of the way that they bind people together into groups that are more or less effective in pursuing a set of common goals or interests. He is so intently focused on the behavioral and political implications of expressing allegiance to a phrase (social justice) that he is actually rather uninterested in whatever it is that people might take the phrase to mean, or the reasons they adduce for seeing social justice in one way rather than another.

This is not to suggest that the excellent social science dedicated to the agrarian question is irrelevant to ethics. Understanding how efforts at intensification both create and then effect economic and political interests is a crucial component to any fully developed understanding of agricultural ethics. Understanding the way that technical innovations contribute to processes of domination and resistance is critical to ethics. But an ideological position based solely on an analysis of who wins and

who loses is rather akin to a rooting interest in an athletic contest. Ethics is not about being a fan (or an antagonist) of Manchester United or the New York Yankees, nor is it (solely) a matter of having a rooting interest in the fate of capital *or* the poor.

Nearly a Decade in the Making

So what would a deliberate attempt to stimulate conversation between agriculturalists practically engaged in strategies of intensification and philosophers attentive to the challenges of ethical thinking look like? In partial answer to that question, Michigan State University and the Wye Campus of Imperial College, London convened a small group of philosophers and practitioners (themselves representing an assortment of disciplines in the agricultural sciences) in January of 2004 for two and half days of conversation. The session was structured as an open-ended give and take in reaction to an ethics paper then nearing completion for FAO. Several participants prepared direct commentaries on the paper, while others reacted to these commentaries. The results of the meeting prompted the design of this book. The original FAO paper is reprinted as Chapter 1, and several participants have contributed papers that develop ideas expressed at the meeting in their chapters. Other chapters are from authors who take the theme of ethics and intensification beyond the discussion at the meeting, extending the conversation into new realms.

The Wye conference had its origins in the FAO ethics process described in some detail by Clive Stannard (Chapter 2). I had been contacted four years earlier by Peter Kenmore of FAO, and our conversations resulted in my being retained under a consulting agreement with FAO to provide advice in drafting some internal documents as well as the FAO Ethics Paper on agricultural intensification. I was joining a process that had already been underway for at least a year. A fair amount of text for the paper had already been written when I came on board, but one specific request was to develop an approach to the subject that would reflect how each of the main schools of thought in philosophical ethics might approach the question of intensification differently. For this task, I adapted material from a PowerPoint presentation that I had been giving to agricultural groups since the early 1990s, and worked closely with a number of groups at FAO to be sure that the resulting paper reflected the intensification debate as they understood it. I turned over the text of a penultimate draft in 2002, and it was subsequently edited both for style and content, then translated into four languages before being published as FAO Ethics Paper No. 3 in 2005.

I showed my PowerPoint and presented the paper at the Wye conference. That resulted in a number of the contributors to this volume referring to it as “Thompson’s paper,” and I cannot guarantee that all of these references have been corrected in the present volume. While I am perfectly happy to be associated with the result of this long FAO process, calling it “Thompson’s paper” is simply not correct. Perhaps 70% of the current text originated on my word processor, but at best half of that represented my own work. Even that portion I contributed simply represents the

collective judgment of the academic philosophy community as opposed to something for which I can be understood to deserve credit for having created. The document which follows this introduction as Chapter 1 is an FAO paper, issued without specific authorship, widely disseminated as such, and available on the FAO website, It is not my work.

The Wye conference was co-funded by MSU and Imperial College, which received some contract support from FAO. MSU's contribution consisted in supporting travel for four individuals to participate (hence the predominance of MSU authors in the current volume). The budget was small and the planning horizon was short. There was little advance publicity and the invitation list was constructed by trying to reflect some degree of both disciplinary and international diversity, though in the end it was availability that may have dictated who participated. The conference did include a more culturally diverse participant list than does this volume. It concluded with a lively session focused on next steps. Some of the points agreed to in that concluding conversation formed the basis for Andrew Dorward's concluding chapter of this book. One further point of agreement was that the work already invested by a number of people who had made presentations should not be lost, and that a book should be produced. This, of course, is that book.

The original idea was 4 long chapters each contemplating a dimension of the original FAO Ethics Paper, with 2 shorter chapters of commentary on each of those 4, leading to 12 chapters overall. That, plus the original paper, Rachael Jamison, Stannard's overview and Dorward's afterword would have been the volume. However, a number of the people who made contributions at the Wye conference elected not to contribute to the book. I was thus left without a full complement of chapters and found myself in pursuit of appropriate additions, a task that took almost two years. In the meantime, chapters that had been written early in the process were on the verge of becoming dated. Of the current chapter authors, Rachael Jamison, John Ouko, David Fraser and Richard Bawden did not attend the Wye conference. While a collection of authors more representative of the global diversity of perspectives might have been desirable, I am especially grateful for these contributions that allowed me complete the book in a not entirely untimely fashion. The primary casualty of this delay is Stannard's chapter, which references a number of events in future tense that have (or should have) by now transpired. In fact, not all of them have transpired; the Ethics of Food Safety consultation he mentions was redefined as a "Readings in Ethics" paper for reasons that are not altogether clear to me. But given that Stannard is now enjoying a well deserved retirement and no longer able to speak for what happens at FAO, I have decided to print the chapter pretty much as we received in the autumn of 2004. Readers are advised not to take all of his predictions at face value.

One thing that has been retained from the Wye conference is the idea of a conversation on ethical issues and approaches. The aims of the book are to be exploratory and experimental, rather than decisive or academic. Thus some chapters explore ways to articulate and critique strategies and rationales of intensification in explicitly philosophical terms, while others articulate challenges of intensification (and thinking reflectively about it) in more practical and institutional

terms. Still other chapters reiterate the model from the MSU/Wye conference, reacting to the statements and views of others and probing new lines along which the conversation might be profitably pursued. The result is predictable in some respects: Philosophical articulations are often insufficiently practical for practitioners, while more practical strategies are insufficiently philosophical for the philosophers. Yet like the participants at the MSU/Wye meeting, all of the contributors to this volume believe that narrowing the gap between philosophical ethics and agricultural policy and practice is worth doing. All believe that there are specific steps that can be taken to do this, and none express skepticism about the importance of taking those steps.

The Plan of the Book

The substantive chapters begin with the paper “The Ethics of Sustainable Agricultural Intensification,” prepared for the Food and Agriculture Organization (FAO) series on ethics. It focuses on the way ethical concepts and ethical terms can be used to articulate normative dimension whenever episodes of intensification occur. The paper provides a basic conceptual framework in ethics that will aid in the articulation and justification of norms for intensification, but does not defend a particular set of answers to the ethical questions that arise in intensification. It summarizes how the three main ethical approaches, consequentialist, rights-based, and virtue based theories, can be used to answer three important questions as regards agricultural intensification: When is intensification ethically good? How should burdens and benefits of (intensification) be distributed? And who is responsible to see that intensification occurs? The paper concludes that it is critical to articulate the ethical rationale for undertaking projects in intensification in terms that draw upon each of the approaches. Omitting any one of these ways of framing ethical issues results in a weakened capacity to articulate, debate, and ultimately perform ethical responsibilities that may arise in connection with the imperatives for intensification. The FAO’s illustrated version can be accessed on line at <http://www.fao.org/docrep/007/j0902e/j0902e02.htm>

In Chapter 2 Clive Stannard gives an extensive description of the steps Food and Agriculture Organization of the United Nations (FAO) has taken to approach the application of ethical perspectives to food and agriculture. He also highlights some of the questions FAO has been asking in developing its ethics program. The main steps FAO has taken are: the formation of a panel of eminent experts on ethics in food and agriculture; and the production of publications on ethics in food and agriculture (*The FAO Ethics Series*). The panel of eminent experts promotes reflections upon ethical issues arising out of food production and consumption. Issues relating to the interests of future generations are also taken up by the eminent experts. FAO Ethics Papers address the ethical components of farming, how best to relate ethical discourse to other modes of discourse such as economic and development theory, how intensification relates to social justice, and whether harm must be

done to some group, or to the environment, because the long-term benefits justify this. The series “Readings in Ethics” complement the ethics papers with additional reflections that represent the perspective of specific individuals or groups.

John Perkins and Rachael Jamison summarize the history of some particularly interesting cases of agricultural change in Chapter 3. Their main argument is that understanding the dynamics of science and technology is necessary but not sufficient to understand agricultural change. Other political, economic, cultural, and ethical factors are also important. Scientists need to understand the social and political environment of agricultural change when they plan their work, since changes in agricultural practices affect not only the scientist and the farmer but also the entire human population. The social context is particularly important when it comes to intensification. Inventors and innovators of agricultural change have seldom given much attention to the complex consequences of change and the ethical implications of technology used in agricultural intensification. Perkins and Jamison point out the ethical implications as regards mobilization of water sources, use of synthetic nitrogen fertilizers, energy supplies, some uses of synthetic pesticides, and transgenic plants. Whereas intensification has been key to producing enough calories to potentially feed the world population, agricultural scientists are faced with a challenge: how to maintain stable yields without jeopardizing agriculture or earth’s resources. The issues of prior informed consent, democracy, public participation, individual and national political power, human health, and the environment complicate the choices that scientists and their supporters must make. The future prosperity of people and all other species depend on the choices made.

Chapter 4 is entitled “One Hundred Years of agricultural Intensification: A Personal History of Unanswered Ethical Issues – 1890–2004.” Allan Schmid examines the ethical implications of a series of farm management choices made by his family in the process of intensification over the 100-plus year period. He notes that intensification led to specialization and need for more capital which many farmers did not have thereby being forced to leave farming. Also, with the coming of new seeds ethical issues were/are involved in whether property rights should apply to seeds at all as well as whether farmers should have the right to replant purchased seeds. Intensification has also led to higher yields but it has also led to the disappearance of some species of plants and animals. Even antibiotics fed to animals for disease control can be dangerous to consumers of animal flesh. Similar arguments apply to other areas related to intensification like energy use, labor, soil conservation, land inheritance processes, and cultural change. Schmid argues that efficiency (which intensification leads to) cannot be a guide to ethics. Efficiency depends on whose interests are a cost of production. Therefore the fact that many of us respond to available opportunities does not mean that our choices are not affecting others. We have an ethical responsibility to forgo some opportunities or to participate in the debate over the rights structure that determines our opportunities.

Many see the history of agriculture as a constant battle against famine, hunger and undernourishment. Michiel Korthals notes in Chapter 5 that Perkins and Jamison also stress the idea of increasing yield in order to feed the growing world

population, but they add that consumers have a lot to say on the type of agriculture and food production, and ought to have some influence on the course of agriculture taken. A case in point is the use of biotechnology in rice production, which aroused discontent in many countries. This example and many others bring Perkins and Jamison to the conclusion that the wider public cannot be left out with respect to important agricultural innovations. On this point Korthals agrees with Perkins and Jamison, but he also identifies a second battle in the history of agricultural intensification, which Perkins and Jamison either did not see or did not talk about: the battle between types of agriculture and the way a dominant type of agriculture is used as a tool in structuring society, both culturally and politically. Agriculture is not only about higher yields, but also about the type of foodstuff to be produced, distributed, sold, bought, prepared and consumed. It is also about the food styles preferred by different people. Thus Korthals sees the history of agriculture as a continuous battle fought between parties that were already represented in agriculture and others that weren't. The history of food production is thus an ethical battle about which food choices should be represented.

Luis Camacho examines agricultural intensification from the perspective of development ethics in Chapter 6. Camacho has taken a closer look at the historical relationship between technology and our ethical ways of life as they have developed unevenly and ambiguously over time. Agricultural intensification increases productivity in development processes yet technology is not always a good thing. Therefore, assessment of the consequences of such intensification for people and the environment are very important in development ethics. Potential victims of new agricultural technologies that intensify production should have a voice in the design as well the use of these technologies to avoid bad and evil consequences. Moreover these harmful consequences can extend to social relations and cultural identity, not just economic well-being. But without the secure cultural identity that is put at risk by some new technologies, some groups may not be able to participate effectively in the technological design process. For this dialogue between traditional culture and industrial culture to result in both more efficient and appropriate technologies for agricultural intensification, there must be a method for balancing the contributions of both locals and outsiders. Development ethics facilitates a dialogue among different groups willing to share factual experiences and moral insights in the struggle for human survival. Because of its unique role in such a survival, the answers given to questions arising from agricultural practices in general and agricultural intensification in particular are of vital importance.

Stephen Esquith appraises Camacho's "ethic for development" – which they also refer to as "development ethics" in Chapter 7. Esquith agrees with Camacho that development ethics goes beyond merely the application of existing standard ethical theories (deontology, consequentialism, and virtue ethics) to problems of development. In his attempt to define development ethics Camacho has taken a closer look at the history of the relationship between technology and ethical ways of life as they have developed unevenly and ambiguously over time. Esquith further agrees with Camacho that agricultural technologies have unintended harmful consequences. They are also in agreement that technologies must be assessed in terms of

their social and cultural effects. And so development ethics ought to take notice of harmful social and cultural consequences of new technologies that intensify the production process. Upon further analysis of Camacho's argument, Esquith has established and made explicit some three principles that he believes Camacho commends (although not explicitly stated by Camacho). These are the principle of inclusion, the principle of identity, and the principle of discourse. Esquith has also extended Camacho's argument beyond the subject of proper ethical conduct that moral agents have to the practical issue of collective responsibility. He has demonstrated how we can expand the categories of ethical theory so that they address the issue of responsibility in as nuanced a way as they address issues of inclusion, identity and deliberative discourse.

Chapter 8 by John Otieno Ouko is entitled "Agricultural Intensification: Some Human Rights Issues." Intensification of agriculture has been essential for centuries in meeting the increasing demand of growing world population for food. Over the past few decades, intensification has taken the form of Green Revolution-style farming. However, it seems there are human rights challenges to be faced especially if we look at Green Revolution-style farming in the wider picture of economic globalization. In this paper Ouko investigates whether actions that result from Green Revolution-style farming are consistent with human rights and duties. Whereas food is a basic human right, it seems that attempts to resolve food needs can be constrained by the rights of others. Some of the rights issues associated with the Green Revolution-style farming examined are patent rights, and consumer rights. The chapter also highlights some of the institutional constraints on agricultural intensification and how they may lead to non fulfillment of the right to food among other rights, especially for the poor in developing countries.

Clare Palmer brings some of the leading approaches to environmental ethics to bear on agricultural issues, especially agricultural intensification in Chapter 9. She maintains that one category of environmental ethicists focuses on intrinsic values some of which are: sentience and welfare, life, species, and ecosystems/ecological processes or qualities. If environmental ethics is understood in these ways, then agricultural intensification is significant inasmuch as it either threatens, or alternatively enhances the possibility for, the existence of such intrinsic values. However, environmental ethicists have challenged this approach, arguing for a more pragmatist, contextual understanding of environmental ethics, where policies can be decided on the basis of compatibilism between different approaches. After analyzing the arguments presented by each of the approaches, Palmer concludes that although there are no easy answers to the rights and wrongs of agricultural intensification from within any branch of environmental ethics (whether from those arguing in favor of intrinsic value in nature, or for those who adopt a more pragmatic orientation), it can be hoped that contributions from environmental ethics can help to clarify values at stake in, and arguments about, episodes and instances of agricultural intensification; and that some of the thinking in environmental ethics may contribute to decision making in particular cases.

Lawrence Busch critiques Palmer's contribution to the debate on environmental ethics and agriculture in Chapter 10. Whereas Busch agrees with Palmer that environmental philosophers have devoted little or no attention to agriculture, he is dissatisfied with her arguments concerning agroecosystems, biodiversity, and aesthetics. Busch charges that Palmer discusses the problems associated with valuing ecosystems without going deeper to explain how we can know when we have an ecosystem. Second, whereas agricultural intensification could have deleterious effects on the environment as argued by Palmer, extensification, which accompanies intensification, improves biodiversity. Third, Palmer's argument on aesthetics fails to take cognizance of the fact that what is taken by one generation to be pleasing may not be so considered by the succeeding generations. Moreover, in some places divergent aesthetic and ethical values can be found. Busch has also discussed these important areas in agricultural intensification: shift from supply to demand, standards and intensification, and third party certification.

In an essay entitled "Agricultural Intensification, Environmental Ethics and Sustainability: Some Ethical Observations," Nigel Dower notes that Palmer's chapter focuses on environmental ethics as about intrinsic value of things in nature and the impact of agricultural intensification. Dower is in broad agreement with Palmer and only takes issues with her on some small points of detailed exposition and in terms of the general way she sets up the discussion in terms of her understanding of environmental ethics. Dower starts by discussing the issue of sustainability which he feels Palmer has not adequately addressed in relation to agricultural intensification. His contention is that the issues Palmer raises are unlikely to be taken seriously by policy-makers unless they are situated in the discourse of sustainability. Here he discusses what sustainable agriculture is, parameters of sustainability, and environmental sustainability as they relate to agricultural intensification. It is within this background that Dower situates Palmer's concerns which are primarily to do with the various ways non-human values come into ethical reckoning and how this impacts on agricultural intensification. These concerns include sentience, life as such, species, and ecosystems.

Chapter 12 by David Fraser began life as an FAO Readings in Ethics Paper. The version published here is revised to fit more directly in line with the theme of intensification. It analyses some of the key developments in the history of animal intensification. Fraser comes to the conclusion that many of the standard claims made by critics of intensive animal production are seriously flawed. These are the three widely held views which Fraser has examined and the conclusions his reasoning has led him to. First, it is being claimed that there is a strong link between intensive animal production and problems of animal welfare. On the contrary, Fraser argues that intensive production systems have some positive effects on animal welfare, and that there is no reason to think that intensive production systems cannot be developed so as to provide high levels of welfare. Second, there is a notion that the development and maintenance of intensive animal production is driven by greed and lack of care by producers. On the contrary Fraser argues that the development of intensive animal production was mainly driven by economic factors beyond the control of individual farmers. Third, there is the idea that the

way forward is either vegetarianism or a return to traditional, extensive, small-scale, multipurpose farming. On the contrary Fraser argues that the way forward is to reform rather than abolish intensive animal agriculture.

In Chapter 13 Peter Sandøe focuses his attention on the original FAO Readings in Ethics paper written by Fraser (available from FAO and online at http://www.fao.org/ethics/readings_en.htm). He notes that the paper claims that intensive production systems have some positive effects on animal welfare and that intensive production systems can be developed so as to provide high levels of welfare; that the development of intensive animal production was mainly driven by economic factors beyond the control of individual farmers; and that the way forward is to reform rather than to abolish intensive animal agriculture. Sandøe argues that the original paper does not take a wider definition of animal welfare seriously hence Fraser's narrow approach to the issue of animal welfare, and commends Fraser for broadening the approach in Chapter 12. He continues to question Fraser's rejection of the perspective of those urging greater emphasis on animal welfare/ or animal rights like Tom Regan and Peter Singer. Finally, Sandøe points out some of what he thinks are the flaws and missing links in Fraser's reform agenda.

Richard Bawden draws upon systems theory in Chapter 14 to place Fraser's discussion of intensification and animal welfare into context. He argues that any attempt to both acknowledge and address the integration of values and science will be successful to the extent that it first recognizes the multiple layers of complexity and concern that face livestock producers as the attempt to respond to the pressures of the economic and regulatory (as well as natural) environment. According to Bawden, one of the failures of science-led attempts to promote development and intensification has been a neglect of the way that they themselves embody a particular systematic approach to knowing that tends to conceal both the value-laden dimensions of science and also the orientations of alternative perspectives. While Bawden commends Fraser for having recognized the complexity of animal welfare within contemporary animal production, he believes that Fraser's approach understates the challenges to be faced in any attempt to address issues of animal welfare within the overarching framework of the ethics of intensification.

Chapter 15, "Ethics in Agricultural Change: Questions and Proposals for Development Processes," by Andrew Dorward notes points of consensus reached at the MSU/Imperial College at Wye Conference on the value and direction for further interactions between philosophers and practitioners of agricultural intensification. He argues that formal ethical analyses of development schemes (not unlike economic analyses currently done) would have the virtue of presenting planners and decision makers with an explicit articulation of the various rationales for undertaking a project on agricultural intensification. Such a tool would be invaluable in helping to identify areas where ethical perspectives converge and diverge in the development planning process. He argues that an iterative approach to ethics would provide roles both for academically trained experts as well as for the voices of affected parties.

Conclusion

In concluding this introductory essay, it is worth stressing that the FAO paper immediately following was itself intended to be introductory to an ethically explicit conversation about agricultural technology and agricultural development. Again, the entire project has been conceived at the outset to be the first, rather than the last, word on the topics covered. In addition to the other FAO papers and documents related to ethics, readers new to this subject are encouraged to consult journals such as *The Journal of Agricultural and Environmental Ethics* or *Agriculture and Human Values* that have been created to serve as a continuing forum for these discussions. And readers are encouraged to join that conversation by adding their own perspectives, reactions and ideas.