Peter W. B. Phillips and Chika B. Onwuekwe (eds): Accessing and Sharing the Benefits of the Genomics Revolution


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Accepted: 22 January 2009 / Published online: 7 February 2009
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This edited book consists of ten chapters and is volume 11 in the series entitled The International Library of Environment, Agriculture and Food Ethics. The contributions cover diverse topics. There are chapters on genetic engineering of plants and on access to genetic information that can be used for medical diagnosis. In addition, a large number of chapters focus on intellectual property rights in traditional knowledge and indigenous genetic material. Most (but not all) of the contributors have a background in law and a special interest in laws relating to intellectual property rights. This is reflected in the coverage of topics. This coverage is from perspectives in the social sciences rather than those of the natural sciences. The book itself is the product of an academic conference that was held in Banff, Canada. Most contributors are Canadian and many contributors draw on Canadian experience. Nevertheless, the Canadian cases considered are of general relevance and international examples and comparisons are provided.

Depending on readers’ interests, chapters will be found to vary in relevance. I found the chapter by Phillips on farmers’ privilege and patented seeds to be particularly interesting because of its focus on political economy. It provides a useful overview of the evolution of intellectual property rights for plant technologies and products, and discusses and evaluates farmers’ privilege to use and resell their seeds. Given current developments in genetic engineering, this privilege (if it previously existed) has been severely curtailed in Canada and the United States. In considering this matter, Phillips gives particular attention to Monsanto Canada Inc v. Schmeiser (2004) and events leading up to it. Schmeiser was accused of planting glyphosate-resistant canola without the approval of Monsanto, the holder of the patent on this genetically modified seed. The Canadian Supreme Court ruled in favor of Monsanto. Phillips does not consider the ethical merits or otherwise of the decision. However, he seems concerned about the court’s finding that Schmeiser did not make any extra profit from the seed. Presumably, if this had been found then Schmeiser would have been liable to pay this extra profit to Monsanto.

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In fact, Phillips argues (p. 57) that Roundup Ready canola has been very profitable for its adopters in Canada and because Canadian farmers had access to these benefits, its rate of adoption was rapid. He estimates that those Canadian farmers who planted Roundup Ready canola earned an extra $100 million in 2000. Thus the way in which the institutional arrangements worked out seem to have his seal of approval. However, private economic benefits are not social economic benefits. Against this private benefit, it is necessary to offset losses suffered by some non-GM growers of canola and probable negative long-term environmental impacts from the growing of herbicide-resistant canola.

Khoury outlines how legal liability impacts on access to and benefit sharing from genomic advances. Legal liability for genetic testing for medical purposes and for the escape of genetically modified organisms are taken as cases. In this chapter, much of the discussion is about the duty of patent-holders and sellers of genetically engineered products and genetic tests to inform users and those at risk of the dangers associated with the use of such products. The discussion of cases involving the escape of genetically modified organisms reveals (in my view) that legal protection for victims of such escapes is quite weak in Canada and presumably, also in the USA. Their protection in several EU countries (such as Germany) appears to be stronger but this is not discussed.

Sheremeta and Knoppers focus on the ethical importance of sharing knowledge about the human genome. They conclude (p. 185) that “in the light of the trend towards genetic research and the widening gap between the developed and developing world, mechanisms are required to ensure that the benefits of the scientific revolution can be shared equally.” Furthermore, they contend (p. 176) that “international human rights law, declaratory statements on the human genome, the Convention on Biological Diversity and the Bonn Guidelines provide a supportable rationale for benefit-sharing in respect to human population genetic research.”

One chapter in this book deals with Costa Rica’s experience with its bioprospecting partnership and four chapters concentrate on the desirability of intellectual property rights in traditional knowledge and genetic material. For example, Onwuekwe (p. 23) contends that “the notion that Plant Genetic Resources (PGRs) found within the frontiers of sovereign states and the associated traditional knowledge are commons resources compound the problem of determining appropriate compensation mechanisms for local peoples who have ensured the conservation and communal improvement of these resources.” Most writers who address the question of indigenous intellectual property rights in this book argue that the compensation paid to indigenous and local communities for biological material and traditional knowledge taken from them is inadequate and unjust. For example, Ikechi Mgbeoji (p. 111) argues that “the intellectual contribution of traditional and indigenous peoples to plant species development and sustenance have largely remained unrecognised, unrewarded, and ruthlessly exploited by both the general framework of international law and various domestic intellectual law institutions in the industrialized countries of the North.” Mgbeoji claims that biopiracy is the omnipresent reality.

A less emotional and more analytical approach is taken by Castle and Gold in their contribution. They argue that distributive justice calls for the sharing of the benefits of all traditional knowledge (especially if that knowledge has important health consequences) and that it is ethically more responsible to follow this approach than to make payments for such knowledge as a form of commutative justice. Various philosophical works such as those of Rawls are referred to in support of this point of view.

Nevertheless, many questions remain unanswered in this book about how and to what extent indigenous people should be compensated for access to traditional knowledge and
genetic material. For example, consider the above quote from Onwuekwe. His view that local people have conserved and improved genetic resources in their area and therefore, should be compensated for their use by others needs to be evaluated critically. There are two aspects: whether or not local people have always acted as portrayed and whether if they did, this should be the basis of compensation. I would claim that in some local areas, genetic material has remained in existence independently of any purposeful action by individuals. The efforts of indigenous people have played no role in its conservation. In addition, the actions of some indigenous people have been responsible for the extinction of species, the conservation of which could have been of future benefit to humanity. Even now, many indigenous people are not following “hallowed” conservation objectives, possibly for their own good reasons. Secondly, some genetic material has been conserved by local people for their own benefit and they may have already gained from that. If others, (possibly unknown when the material was conserved), benefit later form this action, this is windfall. In addition, the original endowment of genetic material in a locality is not controlled by indigenous people. This endowment is largely due to providence. Therefore, any future rents indigenous people earn from it are largely providential. Some indigenous groups stand to make large economic gains from gifts of nature (for example, Australian Aborigines from minerals on their land as a result of payment of royalties by mining companies) whereas, less fortunate indigenous groups with fewer gifts of nature end up with very little. Given the philosophical perspective of Rawls, this seems to be unjust even though it may be politically expedient. Furthermore, one can question (as do Castle and Gold and Sheremeta and Knoppers in this book) whether market-based payments for access to genetic resources are just. Most of us are likely to question such an approach but at the same time are disturbed by the lack of payment (or inadequate payment) for the taking of traditional knowledge and resources by those who are already well-off.

The difficulties involved in compensation are underlined by Clarke (2007). In his in depth study of Australian Aborigines and their plants, Clarke (2007, p. 146) comments: “Regardless of who ‘owns’ ethnobotanical data, it is reasonable to expect that the relevant cultural group gains appropriate benefits in cases where the acquisition of Aboriginal plant use knowledge leads to commercial exploitation.” This leaves open the question of what are the appropriate levels of compensation and what is the relevant cultural group to whom payments should be made? These questions are in my opinion not resolved in the Phillips and Onwuekwe book (2007). However, one cannot expect every aspect of compensation to be covered in a book.

Another question that should be considered is whether rights to traditional intellectual property should exist in perpetuity. Should there be time limits on such rights? Patents have time limits and many indigenous people have benefited from inventions that have been made in the “North.” This is not to say that the situation is perfect and could not be improved but it seems to be less bleak than portrayed by some of the contributors to this book.

In the concluding chapter, Onwuekwe and Phillips discuss new paths that are being adopted to access and share the benefits of genomics. Possibilities considered include compulsory licensing of patented genetic tests and procedures for producing genetically modified organisms. However, these authors remain pessimistic about the prospects of developing countries obtaining economic benefits in the international arena from “the ownership, control and enjoyment of new plant genetic resources and associated traditional knowledge.”
This book covers diverse topics and provides varied views about access to and benefits from genetic technologies and materials. All who have an interest in biodiversity conservation, genetic innovations and the commercialization of genetic material (including the use of traditional knowledge) are likely to find this book worthwhile reading. However, the book leaves several big issues unresolved and in need of further research.

References