

Ethical Issues Concerning GM Crops, Foods and Feeds

Godfrey B. TANGWA, PhD

Associate Professor of Philosophy

University of Yaounde 1, P.O. Box 13597, Yaounde, Cameroon.

Tel: +237 231 8997 / +237 984 3863, Email: gbtangwa@iccnet.cm / gbtangwa@yahoo.com

ABSTRACT

Some of the most revolutionary changes that are transforming the world at the beginning of the third millennium are coming from the field of Biotechnology, which seems to have taken control of the very process of evolution as we have known it thus far. These changes, which involve all living species on earth – plant, animal and human – are ethically highly controversial and addressed in the emergent interdisciplinary field called Bioethics. Bioethics has become an urgent task in all countries, societies and ecological niches, as was well recognized by the Organization of African Unity (OAU) during its 32nd session in Yaounde, Cameroon, in July 1996, when it stated, *inter alia*, in what has come to be known as “the Yaounde Resolution”:

...giving priority and urgent attention to issues pertaining to Bioethics has become an absolute necessity to all societies...

In this paper, we highlight some of the major ethical and socio-cultural concerns connected with Biotechnology, particularly with the phenomenon of genetically modified crops, foods and feeds, and we venture some recommendations.

Key words: Biotechnology, Biethics, Culture, genetic modification

RESUME

A l'aube du troisième millénaire, le monde connaît des changements remarquables, liés au domaine de la Biotechnologie. Ce dernier semble même commander aujourd'hui le processus de l'évolution connu jusqu'ici. De telles révolutions, qui touchent toutes les espèces vivantes sur la terre – végétales, animales, humaine – se trouvent toutefois au cœur de nombreuses controverses, au sein de la Bioéthique, un champ interdisciplinaire émergent. Pour de nombreux pays, sociétés et niches écologiques, la Bioéthique représente un impératif, reconnu par l'O U A (Organisation de l'Unité Africaine) au cours de la 32^{ème} session tenue à Yaoundé, au Cameroun, en juillet 1996, dans ce qui désormais s'appelle la « Résolution de Yaoundé », et qui relève que « donner la priorité et l'urgente attention à toutes les questions relevant à la Bioéthique est désormais une nécessité pour toutes les sociétés ... ». Dans cet article, nous relevons quelques-uns des nombreux problèmes tant éthiques que socioculturels qui sont liés aux biotechnologies, en particulier, à travers le phénomène des OGM (organismes génétiquement modifiés), dans ses rapports avec l'agriculture. Nous terminons par quelques recommandations.

Mots clés : biotechnologie, bioéthique, culture, modification génétique

Introduction

Some of the most revolutionary changes that are transforming the world at the beginning of the third millennium are coming from the field of Biotechnology, which seems to have taken control of the very process of evolution as we have known it thus far. These changes, which involve all living species on earth – plant and animal are ethically highly controversial and addressed in the emergent interdisciplinary field called Bioethics. It is usual nowadays to say that we are living in a biotechnological world. When the full descriptive implications of that statement are drawn it would be clear that, at the prescriptive level, we also need to be living in a bioethically sensitive world. Because of the emergence of biotechnology, Bioethics has become an urgent task in all countries, societies and ecological niches, as was well recognized by the Organization of African Unity (OAU) during its 32nd session in Yaounde, Cameroon, in July 1996, when it stated, *inter alia*, in what has come to be known as “the Yaounde Resolution”:

...giving priority and urgent attention to issues pertaining to Bioethics has become an absolute necessity to all societies...

Modern biotechnology has developed from great advances in molecular biology combined with what traditionally has been termed ‘the industrial revolution’. Biotechnology has been particularly fruitful in the domain of genetics – the science of the basic stuff or building blocks, as it were, of all living things. Biotechnology is scientifically very fascinating and compelling, but it is fraught with both positive possibilities and grave dangers. The positive possibilities, a foretaste of which is already being experienced in the domains of agriculture and human health, include the prospect of banishing famine and hunger from the world and eradicating all gene-related diseases. But such positive possibilities are counterbalanced by the negative possibilities which include the danger of worsening what we set out to improve and even the spectre of accidentally triggering a biological or human health catastrophe. Given the traditional ‘creationist’ world-view, modern biotechnologists can be said to be ‘playing God’, a dangerous game in which human beings ought not to engage.

The Pros and Cons of Biotechnology

Some people (technophiles) are so optimistic about

the positive outcome and possibilities of biotechnology that they are simply blind and heedless about its possible dangers while others are so pessimistic about biotechnological activities (technophobes) that they see nothing good in them. Technophiles argue that we should not be afraid of biotechnology because it not only has proved its worth but is also inevitable and that its own internal safeguards are thoroughly adequate. From this point of view, biotechnology is about the best thing to have happened in human history, as, for the first time, the possibility and opportunity have been created of completely banishing hunger and some of the most distressful human health scourges from the world. Contrarily, technophobes argue that biotechnology not only is unnatural but also dangerous, an attempt at ‘playing God’ which is doomed to woeful and disastrous failure. From this perspective, world hunger can be banished and human health improved through a judicious use and application of the same traditional methods that have been used in the past. Technophobes look particularly askance at manipulation of genes by which God/Nature gave each species of being its specificity. The deliberate attempt to mix the genes of different species is seen not only as foolish but also as potentially extremely dangerous. Between these two polar opposite extreme attitudes, it needs to be recognized that the human spirit of scientific curiosity, coupled with utilitarian thinking and the positive prospects of biotechnology, mean that biotechnology has come to stay and can in no way be wished away, even if its possible dangers are admitted as being real. The only way forward then is to find a means for effective rational and ethical control of the technology, devoid of fanaticism, panic or hostility. That is why on-going bioethical discourses and debates are not only appropriate but also timely.

Bioethics and Cultures

While approaches in bioethics, like in ethics and in morality generally have an important and inevitable cultural grounding and underpinnings, rational arguments in bioethics cut across cultures. It is, for instance, true to say that African culture, generally, is a predominantly oral culture, marked by great variety and diversity and united by certain metaphysico-religious ideas, values, attitudes, practices and experiences. African culture can be described as an eco-bio-communitarian culture (Tangwa 1996) which, as a consequence, tends to be

tolerant, cautious, non-aggressive, non-proselytizing and inward-looking. By contrast, it is equally true to say that Euro-American Western culture is predominantly a literate culture, technologically highly advanced and anthropocentric in its concerns. It operates against a background of a certainty-driven epistemology as well as a Manichean syndrome of Good versus Evil, as a consequence of which it is also a proselytizing and outward-looking culture. But all human cultures are rational cultures, because all human beings are rational beings. No human culture, no human society, today, no matter its level of technological development, no matter its ideas, values, attitudes, practices or experiences can be indifferent to biotechnology. Culture, society and the ethics on the basis of which all human communities, no matter their numerical strength, depend, impose such an interest which, in itself, requires no technical expertise. Ethical issues and problems arise in all domains of human endeavour and, even when they are about technical issues and processes, are in themselves never technical. Ethics deals simply with whether it is good or bad, right or wrong, to do or to refrain from doing any action. This requires nothing more than ordinary rationality, common sense and good will to determine. Hence, any human being, any human culture can express valid ethical judgments/opinions on biotechnology and any of its aspects or processes.

Cartagena Protocol on Biosafety

The need for rationality, ethics, justice and fairness, in the use of biotechnology in the exploitation of the world's biological resources gave rise to the Cartagena Protocol on Biosafety (CPB, 2000), which evolved from the *Convention on Biological Diversity* (CBD). Although opposed by the USA and a hand full of other countries under its influence (Miami group), which prefer a less restricted, less regulated use of biotechnology, the Cartagena Protocol was adopted by about 128 countries, on January 30, 2000, in Montreal, Canada. It provides regulations and guidelines for the use of biotechnology and the trans-boundary movement of genetically modified organisms (MGOs). The underlying guiding principle of the Protocol is the so-called *Precautionary Principle* (PP), established since the Earth Summit in Rio de Janeiro (1992) to the effect that lack of evidence of harm for any technology or technological procedure is not in

itself evidence of lack of harm.

Recognizing the potential vulnerability of developing countries to the biotechnological activities of the developed industrialized countries, the Cartagena Protocol established the procedural principle of *Advance Informed Agreement* (AIA), which requires that, before formal scientific proof, appropriate precautions be taken to refrain from actions that might harm the health of humans, animals, plants or the environment. In this regard, the Protocol puts the burden of proof squarely on those wanting to carry out an innovative action. Cameroon Law No. 2003/006 of 21 April 2003, is an attempt to adapt the CBD, the PP and the AIA principle to the local context, situation and perspective. This law needs to be well ventilated to all appropriate stakeholders and the general public for their sensitization, critical awareness and constructive inputs. In the process of applying this law and of adapting the Cartagena Protocol in general to our local situation and circumstances, we need to weigh and balance urgency against non-action, risks against benefits, intrinsic against created values, excessive technophilia against technophobia, our present needs against those of future generations etc. We also need to be aware of our vulnerabilities and of the dangers of conditioning and manipulation by powerful commercial interests at the expense of naïve public opinion and the health of humans and the environment.

Edifying Examples

Following the series of food scares involving so-called mad cow disease (BSE) in the UK (*Keesing's Record of World Events*, Vol. 46, No. 2, 2000, p. 43374), the European Union (EU) moved fast to establish in 2002 a food watchdog, the European Food and Safety Authority, similar to the U.S. Food and Drug Administration (FDA), although with much less powers, its own powers, unlike those of the FDA, being almost entirely advisory. In addition to the mad cow disease affair, two separate public health scares had caused panic in Belgium and led to products and livestock being banned and withdrawn from sale across Europe (*Keesing's Record of World Events*, Vol. 45, No. 6, 1999, p. 43025). Officials from the Belgian Health Ministry launched an investigation into suspected contaminated feed products for livestock and quarantined 1500 farms where the feed had been used. The feed was believed to be contaminated with dioxin, a carcinogenic

chemical. As a consequence, United States health and safety authorities impounded all pork and poultry products imported from the European Union. The initial contamination had been traced to a single batch of feed manufactured at a Belgian factory. The European Commission instituted legal proceedings against Belgium for failure to conform to EU rules on consumer protection and information. Again in June 1999, the Belgian Health Ministry had announced that up to 100 people had claimed to have fallen ill with symptoms of food poisoning after consuming drinks manufactured by Coca-Cola, as a result of which Coca-Cola products were banned in European Union countries. The Coca-Cola company later admitted that carbon dioxide used in the production of drinks at a plant in Antwerp, Belgium, had been defective and also that a fungicide used to sterilize cans might have caused an "offensive odour" in some products exported to France from Belgium. Meanwhile, at about the same time in France herself, the government, under pressure, admitted that some of its animal feed processing plants had been using untreated sewage residues from septic tanks and effluent from animal carcasses in the preparation of feed for pigs and poultry (*Keesing's Record of World Events*, Vol. 45, No. 7/8, 1999, p. 43112).

Our Post Human Future

Our Post Human Future is the title of a very fascinating and controversial book by Francis Fukuyama (2002), in which he imaginatively attempts to assess the social consequences of the new transformative bio-technologies for the future of humankind in general. Fukuyama views the new developments as a cause for serious concern, occasioning the need for caution. In his view, the ultimate achievement of the biotechnology revolution – the ability to manipulate the human genes and thus to create all our own descendants – is fraught with profound and potentially terrible consequences. Other thinkers of the same general bent of mind have reached similar conclusions. Bill McKibben, for example, whose focus has been environmental, has warned in two popular but powerfully compelling books – *The End of Nature* (1989) and *Enough* (2003) – that human exploitation of Nature will lead us directly to an ecological holocaust, if we do not urgently rethink and readjust our exploitation of and relationship to nature. At the polar opposite end of such concern are those with incorrigible visions of human

perfectibility, who argue that human modification of nature, including human nature, is necessary for improving the human condition and has been going on all the time. This view is perhaps best expressed in the manifesto of *The World Transhumanist Association* (www.transhumanism.org), which defines Transhumanism as "The intellectual and cultural movement that affirms the possibility and desirability of fundamentally improving the human condition through applied reason, especially by developing and making widely available technologies to eliminate aging and greatly enhance human intellectual, physical and psychological capacities". The "Transhumanist Declaration" is very instructive:

- (1) Humanity will be radically changed by technology in the future. We foresee the feasibility of redesigning the human condition, including such parameters as the inevitability of aging, limitations on human and artificial intellects, unchosen psychology, suffering, and our confinement to the planet earth.
- (2) Systematic research should be put into understanding these coming developments and their long-term consequences.
- (3) Transhumanists think that by being generally open and embracing of new technology we have a better chance of turning it to our advantage than if we try to ban or prohibit it.
- (4) Transhumanists advocate the moral right for those who so wish to use technology to extend their mental and physical (including reproductive) capacities and to improve their control over their own lives. We seek personal growth beyond our current biological limitations.
- (5) In planning for the future, it is mandatory to take into account the prospect of dramatic progress in technological capabilities. It would be tragic if the potential benefits failed to materialize because of technophobia and unnecessary prohibitions. On the other hand, it would also be tragic if intelligent life went extinct because of some disaster or war involving advanced technologies.
- (6) We need to create forums where people can rationally debate what needs to be done, and a social order where responsible decisions can be implemented.

(7) Transhumanism advocates the well-being of all sentience (whether in artificial intellects, humans, "posthumans," or non-human animals) and encompasses many principles of modern humanism. Transhumanism does not support any particular party, politician or political platform.

Conclusion

Biotechnological interventions in nature have come to stay and will continue, whether we like the fact or not. This, however, does not mean that biotechnologists should have free reign to do just whatever they fancy. The way out is through reasoned discussion and debate (bioethics) leading to strict regulation (biolaw)

References and Recommended Further Readings

Burley, Justin (ed. 1999). *The Genetic Revolution and Human Rights* (The Oxford Amnesty Lectures), Oxford, New York: Oxford University Press.

Cherfas, Jeremy (2002). *The Human Genome (A beginner's guide to the chemical code of life)*, London, New York, Munich, Melbourne, Delhi: Dorling Kindersley.

Darwin, Charles (1964). *On the Origin of Species*, (Sixteenth printing, 2000), Cambridge, Massachusetts, and London: Harvard University Press.

Darwin, Charles (1874). *The Descent of Man, and Selection in Relation to Sex*, (revised 2nd edition), London: Murray.

Fukuyama, Francis (2002). *Our Posthuman Future: Consequences of the Biotechnology Revolution*, London: Profile Books Ltd.

McKibben, Bill (1989). *The End of Nature (Humanity, Climate Change and the Natural World)*, London: Bloomsbury Publishing Plc.

Tangwa, Godfrey B. (1996). "Bioethics: An African Perspective", *Bioethics* (Official Journal of the International Association of Bioethics), Vol. 10, No. 3, pp.183-200.

Tangwa, Godfrey B. (1999). "African Bioethics and Globalisation", *World Development: Aid and Foreign Direct Investment 1999/2000*, London: Kensington Publications Ltd. in Conjunction with the World Business Council for Sustainable Development (WBCSD), pp. 115-118.

Tangwa, Godfrey B. (1999). "GENETIC INFORMATION: Questions and Worries from an African Background", *GENETIC INFORMATION: Aquisition, Access, and Control*, edited by Alison K. Thompson and Ruth F. Chadwick, New York, Boston, Dordrecht, London, Moscow: Kluwer Academic/Plenum Publishers, pp. 275-281.

Tangwa, Godfrey B. (2004). "Some African Reflections on Biomedical and Environmental Ethics", *A Companion to African Philosophy*, edited by Kwasi Wiredu, Oxford: Blackwell Publishing Ltd., pp. 387-395.

Tangwa, Godfrey B. (2004). "Morality and Culture: Are Ethics Culture-Dependent? *Türkiye Klinikleri Journal of Medical Ethics, Law and History*, Vol. 12, No. 2, pp. 92-97.

Tangwa, Godfrey B. (2004). "Bioethics, Biotechnology and Culture: A Voice from the Margins", *Developing World Bioethics* (forthcoming, November).