

Review

Rethinking green revolution program: The impact of Mozambique's fast-track green revolution program on the environment and animal rights

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The green revolution program (GRP) in Mozambique has taken centre stage in academic circles, and academics and researchers have tussled with various aspects of this subject. While the GRP is meant to reduce the country's food insecurity and was successfully implemented in some countries like India (Arundhati, 2004), the results have been different in many African countries. In Mozambique, GRP has dramatically impacted on the rights of non-human animals and the physical environment. Using selected cases of environmental upsets and violation of animal rights drawn from Mozambique's print media and academic literature, the negative impact of fast track green revolution program in Mozambique on the rights of non-human animals and the environment was examined. The article thus, examines how the environment has been upset and non-human animal rights to life and unhindered access to space of habitation have been violated in the name of GRP in Mozambique. Towards this end, a framework is presented for studying environmental practices that impact on how knowledge, ideas and values with respect to non-human animal rights should be transmitted and developed from one generation to another for the good and posterity of the physical environment and non-human animals.

Key words: Rethinking, green revolution program, Mozambique, environment, animal rights.

INTRODUCTION

Mozambique's disorganized and violent ridden green revolution program (GRP) has provoked serious debates and attention from various interest groups: academics, moralists, environmentalists and advocates of animal rights. While the program was meant to reduce the country's food insecurity, its impact on the natural environment and non-human animals (heretofore referred to as animals) has resulted in earthshaking transformations in terms of animal rights to life and unhindered access to space of habitation and damage to the environment. Since the "call for the country to lead the green revolution (GR) in sub-Saharan Africa" (Africa News Network, 2008) by the President, Armando Guebuza, there have been increased changes in the then status quo in terms of human and animal rights and balance of nature in the physical environment in countryside.

The impact of the GRP in Mozambique has been largely a direct effect of uncontrolled veld fires which has intensified since the start of the Mozambican green revolution program (MGRP). Veld fires are "blazes that

get out of control and devastate extensive tracts of forest, grassland, wildlife and other natural resources as well as injure and kill people and destroy their properties" (Natural Resources, Agricultural Development and Food Security, 2009). Human beings are responsible for 95% of forest and veld fires (Mkwanazi, 2007), as natural fires (not influenced directly by human beings) have become rare.

The call for the country to lead the GRP, thus, has resulted in hasty and unplanned form of agriculture by poor peasant farmers in the countryside. On the 27th of July, 2008, the President declared that "the success of the green revolution lies in the hands of the family sector-peasant farmers, and not of big projects such as Mozagrius" (Africa News Network, 27/07/08). Mozagrius was a grandiose in the mid-1990s, whereby South African farmers were, in the name of green revolution, to be attracted to Niassa province, where their mechanized agriculture would boost production. About a month after the declaration, "veld fires in the central provinces of

Mozambique allegedly started by local farmers extending their fields, destroyed 16,000 hectares of arable land” (News-Africa, 18/09/08). According to the same source, many animals were displaced, killed and deprived of their habitats. Animals thus have been faced with new and sustained threats to their livelihoods and habitats as farmers venture into the havens of the helpless animals with impunity for space to till. On the other hand, domestic animals particularly cattle and donkeys have suffered pitiful exploitation as the local farmers, poor as they are, have no farm machinery to use in their farms. Makamure (1970: 114) confirms “at the sorry end of human beings’ excesses are the domesticated animals that have been used by humanity to till the land, as source of meat, clothes and ropes, to pull carts and other chores that make life for humanity better” at the expense of suffering animals. The history of humans and animals, thus, has always portrayed a morally disturbing inequality between the two species. Humans have never accepted a situation whereby they put themselves on the same level with non-human animals moral-wise. Instead, a master-slave relationship has always existed especially between humans and the domesticated animals.

Mozambican history, however, shows that before the chaotic fast-track GR animals had at least “reasonable space” (News-Africa, 18/09/08) of habitation, the right of animals to live in a natural free environment from human manipulation and interference was not severely threatened. The two did not fiercely compete for space, neither did they compete for resources provided by nature for their sustenance and habitation. The relationship between human and animals thus turned otherwise with the advent of the so-called Mozambican green revolution program (MGRP). In the name of this program, land has increasingly become a scarce resource for both human beings and animals as competition for space between the two species gets stiffer year by year. This chaotic fast-track program has overlooked the plight of animals thereby bringing about unfortunate changes on the relationship between animals and humans with the physical environment.

As a result, the relationship gap between humans and animals has continued to widen in terms of moral and legal disparities. Although, both domesticated and wild animals throughout Mozambique’s recorded history have suffered degradation, unimaginable and pitiful slavery, and possible extinction at the hands of human race, their suffering has thus intensified since the onset of the fast-track GRP in the country.

In this light, the author contended that the government, and in particular the ministries of Agriculture, National Farmer’s Union of Mozambique (UNAC), Wildlife and Forestry have an uphill task to teach farmers good farming practices that do not upset the physical environment and violate animals’ rights before continuing with their campaigns to call the country to lead the green revolution in sub-Saharan Africa.

Understanding the concept of green revolution

Since the beginning of agriculture on earth, people have been working to improve seed quality and variety. However, the term green revolution (GR) was never used. It was first used in 1968 by former USAID director, William Gaud to describe the transformation of agriculture in many developing nations that led to significant increases in agricultural production between the 1940s and 1960s (Arundhati, 2004). This was partly triggered by the worst recorded food disaster known as the Bengal famine that occurred in 1943 in the then British-ruled India, killing four million people of hunger in eastern India. Amartya Sen (1989) established that, while food shortage was a contributor to the problem, a more potent factor was the result of hysteria related to world war 11, which made food supply a low priority for the British rulers. According to Sen (Ibid), when it started, there were three basic elements in the method of the green revolution namely:

1. Continuing expansion of farming areas.
2. Double-cropping in the existing farmland (growing two crop varieties seasons per year, with water for second season coming from irrigation)
3. Using seeds with improved genetics (mainly wheat, rice, millet and corn).

The reason why these ‘modern varieties’ produced more than traditional varieties was that they were more responsive to controlled irrigation and petrochemical fertilizers. With a big boost from the international agriculture research centers created by the Rockefeller and Ford foundations, the “miracle seeds” quickly spread to Asia and new strains of rice and corn were also developed (Gaud, 1968). By the 1970s, the new seeds accompanied by chemical fertilizers, pesticides and irrigation had replaced the traditional farming practices of millions of farmers in developing countries and by the 1990s, almost 75% of the area under rice cultivation in Asia was growing these new varieties (Ibid). The same was true for almost half of the wheat planted in Africa and more than half in Latin America. In overall, a very large percentage of farmers in the developing world were using GR seeds, with the greatest use found in Asia followed by Latin America.

Background to the Mozambican green revolution program (MGRP)

Mozambique’s independence was achieved in 1975 after a ten year guerrilla war by the *Frente de Libertação de Moçambique* (Frelimo) against Portuguese colonial rule. For centuries, agriculture in Mozambique was characterized by subsistence farming, primitive techniques and low yields, thus after independence, Mozambique made an attempt to move away from primitive farming

techniques. One way out of this situation was to engage in the so-called green revolution.

“Mozambique’s attempt to launch a green revolution program goes back to as early as 1981” (Hermele, 1988). Foodfirst affirms this when it notes, “the ‘new green revolution’ has already been implemented in some African countries and even in our own country, without being named so” (Foodfirst-Mozambique, 2007). In 1981, the Ministry of Agriculture admitted that none of the state farms were profitable. Since then, several official explanations have emerged to account for such record of failure: excessively centralized management, poor control of stocks, insufficient infrastructure, poor use of machinery and lack of experience. In addition to these technical constraints, Hermele argues that social and political factors led to failure in the agriculture sector. In view of this, he notes that “after independence, Frelimo broke sharply with pre-independence policies in the liberated zones/rural areas” (1bid). Instead of sustaining realistic alliances with some of the progressive, traditional, local authorities and existing social classes and market economy, Frelimo pursued a policy aimed at the total transformation of Mozambican rural society based on wage labor in collective farms as was with the case of agro-industrial site at Chokwe (Gaza province). Unfortunately, the peasant farmers around the area were not prepared to be agricultural laborers on state farm lands which they had originally occupied and then been expelled from first by the colonial regime and later by the Mozambican government. For this reason, they resisted the decision by government and consequently the progress was very slow. Geffray (1990) confirms that agricultural producer co-operatives suffered from labor, organizational and technical problems. The government’s decision to embark on collective farming in state farm lands was premised on two major misconceptions: that they would develop spontaneously through mobilization of peasants, and that they would be rewarded by immediate increases in output. Unfortunately, neither of these assumptions practically materialized, yet the government’s focus on large-scale agriculture had prevented it from thinking through the problems of expanding small holdings as a major theme in their economic program. Thus, the government’s failure to provide support for peasant farmers at grass roots level resulted in some peasant farmers who had economic alternatives to abandon the state schemes.

The fourth and fifth party congresses of 1983 and 1989 respectively were an attempt to correct earlier mistakes and shortcomings, and heralding a new emphasis on more decentralized and capitalist-oriented small scale projects. It was also aimed at distributing land to peasant and private farmers, right from district level. However, state farms remained important, though they were to be oriented more towards production for export than to produce for urban markets in the country (Roesch, 1989). After the 16 year civil war that ended in 1992, the

government remained focused on agriculture but now with incited intense competition over land resource, as many people who had fled out of the country during the war had come back. Besides, soaring prices, elimination of nearly all food subsidies and high levels of unemployment resulted in most families, both in rural and urban areas, the realization of the critical importance of having a piece of land to grow basic crops for their families and sell the surplus. Competition on land thus increased immensely.

Though it is true that Mozambique’s agricultural sector was growing very slowly, Mozambique had to use agriculture as one of the strategies to get out of her economic squalors. In the mid-1990s, Mozagrius, a grandiose scheme whereby South African farmers were to be attracted to Niassa (Tete province), where their mechanized agriculture would boost production, was invited by the Mozambican government to practice their advanced agriculture (Africanagriculture, 2008). But though, some of the South African media compared the scheme to a second “great trek” (1bid), only a dozen or so South Africans came to Niassa and most left within few years. The money was never forthcoming and the scheme collapsed. This is one other reason why Rodman and Gatu (2008) conclude that neither the state, market, farmers nor the geopolitical context are working in favor of a GR in Mozambique, as the farmers have to deal with too many obstacles if a green revolution is to be possible.

In the 2004 and 2009 Presidential campaign manifestos, Armando Guebuza promised that he would promote agriculture and do away with corruption in order to eradicate poverty in Mozambique. In 2007, “President Guebuza calls Mozambique to aim at leading green revolution” (Malakata, 2007). The President further pointed out “large scale projects may not respond to the goals of the green revolution because their primary objective is to make profit” (Africa News Network, 2008). However, he acknowledged the role played by commercial farmers in increasing agricultural production, but reiterating that the family sector is the key to success in food self-sufficiency. This has however resulted in more problems than solved. In the ensuing paragraphs, I will discuss the Western conception of the relationship between humans and animals throughout recorded history will be discussed before how this relationship has aggravated in the context of the MGRP. This is because there is dearth of African literature on the classical conception of the relationship between humans and animals.

The GRP and its problems in Mozambique

Green revolution technology in Mozambique like anywhere else in the world is aimed at increasing agricultural production and reduction of the country’s food insecurity. However, in Mozambique, the GRP has created more problems than it intends to solve, not only to the physical

environment, but also to animals and humans themselves. For example, competition for land resource between humans and animals has become fiercer. Land can be defined as “a natural resource that can be used as an instrument of production that gives life and means of survival to both human and animals” (Moyana, 1984: 13).

This definition implies that animals just like human beings are entitled to rights for life, free living space and interaction with their environment. In Mozambique, this understanding however seems to be too far from being realized as the relationship between humans and animals with the physical environment has ever aggravated.

MGRP and its impact on non-human animal rights

Though there is dearth of African literature on conception of animals by man, it is clear that throughout Mozambique's recorded history, the human race has tended to view animals (both wild and domestic) as nothing of any moral status, but natural resources for their own good. Plato (428-348) set a strong philosophical tradition on the question of the relationship between the human race and animals. He regarded man as primarily not an animal at all, but a superior being with rational powers (Miller, 1983). Plato's characterization suggests that man being rational is an animal of a higher order that deserves moral consideration and treatment completely different from that of animals. In his theory of evolution, Plato affirms that all other animal species have descended from man. He notes “the descent is downward and the first step from man is woman and children. Animals occupy the lowest rank on the moral scale” (ibid: p.2). In view of this, Plato argues that animals cannot expect to be accorded moral status equal to that of man or at least any moral status.

Aristotle (384-322) seconded his teacher's view on relation between animals and the human race to a greater extent. He argues that animals should never be accorded any moral status for the reason that they are irrational. Aristotle identifies three levels of life. These are nutritional/vegetative (plant life with powers of reproduction), animal (with powers of sensation including those of the lower levels) and human lives (intellectual powers including those of the lower levels). Since human life is at the highest level, it follows that “there is more to life in man than in a dog, in a dog than in a worm, in a worm than in a plant, and in a plant than in a stone” (O'Connor, 1985:53), hence, Aristotle's famous *Scala naturae*- ladder of nature. From the understanding that life is characterized by the “psyche” which thinks, reasons and wills; life has been technically construed as “the condition that distinguishes animate from inanimate things including the capacity for growth, reproduction, functional activity and continual change preceding death” (ibid). The point has to be made however, that for Aristotle, since vegetative

life is inferior to animals and human beings, they must meet the needs of animals and human beings. Likewise, because human beings are endowed with the faculty of reason, they are superior to animals. The primary function of animals is therefore to serve the needs of human beings (Miller, 1983).

Aristotle further defended his view using a doctrine of natural slavery in which he ranks in a decreasing order of merit: man, woman, child, natural slave and lastly animals. In his words, “the ox is the poor man's slave” (ibid: p.2). This shows that animals are viewed in a degrading way in the Aristotelian world view.

Thomas Aquinas (1225-1274) agreed with Plato and Aristotle that human beings are more superior to non-human animals. He ruled out the “possibility of sinning against animals or the natural world” (Singer, 1993), if humans exploit them for their benefit. Aquinas identifies the faculty of reason as the central feature that distinguishes human beings from animals. Following Plato and Aristotle, Aquinas argues that only rational beings are capable of examining and determining their actions. Other beings like animals cannot direct their own actions. For this reason, only human beings can be ascribed intrinsic moral worth. Animals only have instrumental value and not intrinsic moral worth (Attifield, 1991) as they exist in order to be used in different ways by human beings.

Immanuel Kant (1724-1804) holds a similar view. For him, “rationality and autonomy are the central features that only human beings and not animals have” (Boss, 1999:25). Though, Kant acknowledges that both human beings and beings have desires that urge them to perform certain actions, only human beings can reflect on their actions and determine whether the actions are worth. Out of this reflection, human beings can act out of good will and reason. Other animals cannot as they lack rationality and autonomy.

Boss, a contemporary scholar, has also argued against according moral rights to animals. For him, “animals lack the capacity for autonomous moral judgment and reasoning” (Ibid). It is out of this understanding that Boss reasons only human beings to deserve direct moral consideration.

It is unfortunate on the part of animals, that the general conception of the above scholars have been transported into today societies and seems to have dramatically influenced the Mozambican traditional societies as well. Domesticated animals like cattle and donkeys have always been used to work in the fields and for draught power. Wild and domesticated animals have also been used as sources of meat, leather, ropes and milk. The traditional Mozambican societies thus share the views of Western scholars like Plato, Aristotle, Aquinas, Kant and Boss. It is evident that the farmers involved in the MGRP are not ranking animals on the “moral ladder” as they think animals since the beginning of history were meant to serve and satisfy the interests and needs of human

beings. While Mozambican societies acknowledge that both wild and domestic animals have traditionally played a pivotal role in the life of humanity in serving as sources of meat, milk, clothing, draught power and in various traditional ceremonies, they think animals have always had instrumental rather than moral value. The call by the President for Mozambique to lead green revolution in sub-Saharan Africa has resulted in the intense use of cattle and donkeys by poor farmers in the rural provinces of Manica, Sofala, Tete, Nampula, Niassa, Zambezia and Cabo Delgado who are occupying the new farming areas but without enough or proper farm machinery for tillage. According to Allafrica (2009), most of the people in Majune district (Niassa), one of the districts with potential agricultural production, live in abject poverty. Domesticated animals such as cattle and donkeys are suffering the consequences as they are the sources of labor in the fields. Worse still, these animals are denied the right to share the proceeds. For example, if caught in the field which the oxen or the donkey itself helped in ploughing, the animal is ruthlessly beaten. Other domesticated animals like dogs suffer the same moral inequalities from the human race. Because the farmers' fields are not fenced, dogs are serving as field guards to potential animal pests, which might destroy crops. Unfortunately, the dogs receive nothing in the end, not even the right to decent meals. This morally disturbing inequality between animals and the human race is a clear testimony that Mozambican traditional societies share the Western traditional view of man's dominion over animals and the latter's use as means to human ends. Such a pitiful relationship between animals and human beings can be equated to a master-slave relationship whereby a slave lives only to serve the interests and needs of his/her master.

It is out of this understanding that the author's conception of the relationship between humans and animals identifies with Jeremy Bentham (1748-1832) and his follower J.S. Mill (1806-1873) who advocate the ascription of moral status to animals. Bentham, the founder of hedonistic utilitarianism held that, an act is right if it brings about the greatest net amount of pleasure, wrong if it brings about net sadness to the one(s) affected by the action. Bentham for instance, had it that the important feature to put animals in the moral realm must not be the reason or ability to talk, but the fact that they can suffer (Regan, 1983) in much the same way as human beings. In the like manner, Regan vehemently argues against the use of animals in factory farms, laboratories and zoos since under such conditions the animals are used as mere means to human ends; yet, "if human beings have rights so are non-human animals" (ibid).

Animals thus are morally equal to human beings. Thus for Bentham, Regan and rightly so, the "unfair" use of donkeys and cattle by those involved in the MGRP would have not only incited serious moral questions, but also set an uphill challenge to the President and his

government who called for peasant farmers to engage in an unplanned GRP.

In view of what is transpiring in the newly settled areas between human and animals, Peter Singer rightly advocates for animal liberation based on Bentham's utilitarian theory. Singer (1993: 117) remarks "sentience and not reason is the criterion that ought to be used to consider a being's moral status". Sentience is the capacity to feel pain and pleasure. In this light, since the cited animals are working but receiving nothing in the end, they, just like human beings feel pain. They should therefore be accorded moral consideration equal to that of human beings. Thus for Singer and rightly so, no objective assessment can support the view that it is always worse to oppress members of our species who are persons than species who are not. It is out of this understanding that one would accuse those who deny animals' moral consideration for committing a fallacy called "speciesism". Denying other sentient beings right to moral consideration is denying the same rights to oneself.

Wild animals have not been spared by the green revolution farmers' cowardice. In pre-colonial Mozambique, "the right of wild animals to live in a natural environment free from human manipulation was not yet severely threatened" (Wolmer, 2007), since human population was still very low. The human race and wild animals did not fiercely compete for space and other resources for survival. The advent of the Portuguese settlers and later the GR farmers has however in said provinces, reversed the situation. The natural resource (land) has since increasingly become a scarce resource, both to the Mozambicans and the wild animals. Wild animals have been unfortunately deprived of their rights to land resource and food products from nature as the new farmers venture into their havens with impunity for meat and space to till and settle. Thus, throughout recorded history, the relationship between animals (both domesticated and wild animals) and the human race have always shown serious moral disparities.

The life of the human race thus, has always been improved at the expense of suffering animals. Mozambique's disorganized so-called green revolution seems to have overlooked the plight of animals as new farmers scramble to grab and clear land that used to be havens for the animals. Most of the wild animals have been left stranded thereby falling prey to the new farmers themselves. Some of the species' existence as in the case of *mavhondo* (rabbit-like animals), hares and elephants which used to exist in very large numbers in the rural areas of Zambezia, Manica, Sofala and Tete provinces has been threatened (Allafrica, 2009). It is for this reason that the author identifies with Schmidt Raghavan who argued for the moral status of animals. For Raghavan and indeed so, all living things including animals have inherent moral value and ought to be treated with equal respect. She remarks "human beings ought to refrain from killing and causing pain and

suffering to helpless animals when alternative and more economical sources are available" (Raghavan, 1999). In view of this, the suffering and mass onslaughts which these animals are facing is morally unjust.

The impact of MGRP on the physical environment

Traditionally, Mozambicans have an environmental ethic that considers the interests and needs of the whole natural environment. They are totally against wanton destruction of both fauna and flora. Traditionally, anyone who wantonly destroys vegetation was considered unethical and inhumane. The culprit would be arrested by the chief's policemen and tried in court. In Mozambique and by extension Africa, the natural environment is said to contain sacred places which are residing palaces of the ancestral spirits. Such places include rivers, mountains, forests and sacred curves. With the advent of the Portuguese settlers and later the invasion of land by local peasant farmers under the so-called MGRP, a negative relationship has developed between the Mozambicans and their physical environment. Sacred places like mountains and forests have suffered immense destruction from human induced fires. Afrol News (05/09/2008) reveals that more than 16,000 hectares of arable land in three central provinces of Mozambique (Manica, Sofala and Nampula) were destroyed by veld fires. These fires contribute to a significant proportion of land degradation and green house gases to the atmosphere. Furthermore, fires destroy resources needed for immediate use over the dry season, crops, firewood, water sources and grazing land. Frequent veld fires may also have long-term effect on the reproductive capacity of important veld products such as vegetation and humus.

Even more troublesome, the culprits are rarely identified or held accountable. Besides, many incidences of the damage to the physical environment by such fires go unreported as some rural areas are too remote for news reporters to access easily. The director of Mozambique's relief agency, Joao Ribeiro confirms "this only reflects to areas where fires are known and the number of victims might be higher than officially recorded" (Werichanel, 2008).

In a recent study, Allafrica (2009) observes that farming in Majune district in Niassa could wipe away the scenic beauty of the area even before it can realize its potential as a successful ecotourism product, as evidence of indiscriminate burning of the bush are common and nobody seems to care. Illegal settlement by farmers trying to fight poverty by exploiting the natural resources particularly the forests is a common thing. The forest is usually burnt wantonly to create space for a new farmland and settlements whose residents embark on charcoal making and falling poles to sell. All these activities degrade the physical environment and upset the balance of nature. Thus, extensive education and sound agronomic practices are

necessary as they can markedly help in minimizing environmental damage and increase crop productivity and yield. By default, the failure of the state to provide appropriate legislative interventions to educate the new farmers under the green revolution good farming practices that does not violate human rights makes the state an "accomplice" in this arrangement.

It is the contention of this paper therefore that the government, and in particular the ministries of Agriculture, Wildlife and Forestry have an uphill task to teach farmers good farming or agronomic practices that does not upset the environment and violate both humans and animal rights, before continuing with their campaigns to call the country to lead the green revolution in Africa.

Conclusion

In this study, the history of the relationship of human beings with animals and the physical environment has been examined. The author has argued that throughout recorded history, the relationship between human beings and the domesticated animals have been that of the master-slave. That of human beings and the wild animals has always been likened to the relationship between cats and rats, where the former always hunt the later. Most importantly, the study has demonstrated that in Mozambique, the relationship between the human race and animals has been aggravated by the fast-track and pre-planned green revolution program. Through the program, the physical environment has not been spared from fatal degradation as the balance of nature has been dramatically threatened and devastated. In view of this realization, the author has argued on the basis of life ethics for the consideration of the moral status and rights of the physical environment and non-human animals.

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