THE GLOBAL POLITICAL ECONOMY AND THE FUTURE OF AFRICA
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Introduction

The 2007-8 global economic crises have changed the way we shall run the world economy and politics in the future. Mass democratic pressures such as those we are witnessing in the Arab World are already indicative of the way countries will try to cope with problems of equality in economics and freedom in political life. The meltdown is deep and it is amazing that when it struck many people did not see its magnitude and its long-term implications. Indeed, many observers at first viewed the meltdown as purely an American phenomenon. It was, they argued, a ‘sub-prime mortgage crisis.’ Others who saw deeper elements in the crisis called it a ‘credit crunch,’ but soon realised that it was not a ‘credit crunch’ related only to the ‘sub-prime’ mortgage crisis, but a ‘financial crisis.’ Even with this broadened understanding, the crisis was still regarded as mainly a US problem and not a global one, with the exception of the British Prime Minister, Gordon Brown, who was amongst the first world leaders to say so.

Even then, very few world leaders and economists, including ‘monetarist economists,’ realised that the crisis was a multifaceted one and that at bottom, it was an ‘economic crisis.’ From mid-September 2008, the effects began to be felt globally as US leaders began to talk of an eminent ‘recession.’ In early October 2008, I was one of the few observers who predicted the seriousness of the widening crisis. I wrote three short articles for a local Uganda Sunday newspaper called The Sunday Monitor in which I warned that what we were witnessing was not just a ‘financial crisis’ nor an ‘economic crisis’ but a ‘global capitalist economic crisis’ and that the crisis was terminal for capitalism. This is what I wrote:

“The present ‘financial’ crisis afflicting the global economy should not be seen from the narrow focus of the credit crunch and its relationship to the subprime mortgage crisis in the Western countries, especially the US. The crisis goes to the very foundations of the global capitalist system and it should be analysed from that angle. What is at the core of the crisis is the over-extension of credit on a narrow material production base. This is in a situation in which money has become increasingly detached from its material base of a money commodity that can measure its value such as gold. But this is not just a monetary phenomenon. It has its roots in the ‘real economy’ of which it is part.”

I was able to comment quickly and assess the magnitude of what was happening because I had in the 1980s done a serious study of money and credit which resulted in the publication of one major work: The Rise and Fall of Money Capital [1990] and its small version: The Crash of International Finance [1989] following the credit crisis of 1987, which was referred to as Bloody Monday. In writing these volumes, I studied all the works of Marx dealing with Capital and Money as well as the work of the then only serious bourgeois economist who appeared to understand money, Maynard Keynes, who had tried to grapple with the consequences of the ‘industrial cycle’ and how to manage it. In those works, we demonstrated how capital in the form of finance capital had lost its productive power, increasingly resorting to ‘financiering’ and the ‘producing money without production,’ which now lay behind the 2008 economic ‘meltdown.’

The response of the G-20 governments was ‘swift’ but not focused. The response started in the US with President Bush rushing through Congress a ‘bail-out’ plan of a colossal $700 billion to save the ailing banks from collapsing in the wake of the crisis. The idea of the US plan was to buy ‘toxic assets’
such as ‘derivatives’ hidden in the banks in the hope that such a move would ‘stabilise’ them and create an atmosphere of confidence for them to begin lending to each other and to industry and individuals once again since the ‘real economy’ was grinding to a halt. This turned out to be a misunderstanding of the crisis and so the first $250 billion that was pumped into the banks at this time ended up coming back to the Federal Reserve Bank by the very banks buying Treasury Bills and Bonds which they held as ‘real’ money. Instead of trying to help save the economy, the banks were more concerned with saving themselves.

In the meantime, the British Prime Minister, Gordon Brown, also rushed through Parliament his own ‘rescue’ plan, but with a different approach. The 50 billion pounds sterling that he proposed was used to buy shares in three commercial banks, which were perceived to be near collapse. The British government became an investor in those banks to the extent of the amounts the government had invested in them. This response sent a different message to the banks, which unlike the American banks, begun to slowly ‘unfreeze’ credit by lending to each other cautiously. But this was because, in addition to buying shares, the British government had also guaranteed the banks to engage in inter-bank lending without the risk of losing their money.

What was clear from these two responses was that the State had once more become an active participant in the economy – doing away with the neo-liberal myth of the ‘freedom of the markets’ which had led to the crisis in the first place. This trend has continued, but although there has been some ‘recovery’ taking place in the Western economies, this has mainly come out of the ‘bail-outs’ of countries such as China and India which have provided some economic activity in the main developed capitalist economies. China, for instance, had been the first ‘emerging economy’ to take the issue of stimulating the economy seriously, when, on November 9th 2008, it advanced an emergency programme to protect jobs and stabilise the Chinese economy in the wake of the factory closures and mass layoffs that had swept the country over the previous few months. The Chinese minister of Human Resources and Social Security, Mr Yin, had said that: “The global economic crisis is picking up speed and spreading from developed to developing countries and the effects are becoming more and more pronounced here. Our economy is facing a serious challenge,”

Thus, with its focus on keeping its own economy on track, China announced a four trillion Yuan ($586 billion) stimulus package, the largest in the country’s history. China’s State Council unveiled it on November 9th, with a two-year time span. The stimulus was aimed at injecting funds into ten sectors, including health care, education, low-income housing, environmental protection and schemes to promote technological innovation as well as transport and other infrastructure projects. The plan was also to be directed into reconstruction efforts in areas that had been struck by natural disasters, such as Sichuan province, which was devastated by a massive earthquake in May. The measures also included a loosening of credit policies and tax cuts. They also called for reforms in the country’s value-added tax regime that would save industry 120 billion Yuan. Credit ceilings for commercial banks were to be abolished in the hope that this would result in channelling more capital to small enterprises, rural areas and unspecified “priority projects”.

**Consequences of the crisis**

It is clear now that, despite the attempts to fight the recession and achieve some amount of recovery, the economies of major developed countries such as the US, Britain and most EU countries, as well as Japan, are still fragile and unstable. Germany has done much better because of its reliance on the Chinese recovery by supplying it with capital goods. What is characteristic of all
countries of the world is the growing inequality, poverty and the galloping food prices. The crises that we are witnessing in the countries of the Middle East and North Africa have been sparked off by the food crisis, which is only one aspect of the inequality. The crisis of capitalism at its core can be traced at the level of distribution in the food crisis in the mid-2008s, which turned out to be linked to the speculations in the global commodities markets.

This is why the financial crisis was also a reflection of the energy and food crisis, because oil and food products such as oil, wheat, rice and other commodities had been subjected to speculative trading to back up paper money many years in the future. The British Prime Minister, among the world leaders, was the only one who saw this connection when he brought up the issue in the World Bank meeting called to address the food crisis in 2008. The real problem underlying currency instability and commodity price volatilities was that the dollar, which acts as a global reserve currency, was not backed by any solid money commodities such as gold or silver and this is because these money-commodities could no longer fulfil those functions. This is what led to the food commodities coming into the picture to back up future contracts and derivatives expressed in US dollars and held by banks.

The number of future contracts for wheat, which made commitments to buy or sell a given volume of wheat at a certain future date at a predetermined price, for instance, had quadrupled over the previous five years (2003-2008). What made matters worse was the fact that speculation had become especially active by exploiting the record low inventories in the existing agricultural commodities. In the past 25 years, most countries had gradually abandoned the policy of stocking grains and other agricultural commodities, which acted as food security stocks. With the food market being in turmoil, there were no food cushions to absorb the impact of any sudden disruption in their ability to import grains.

During the first three months of 2008, international nominal prices of all major food commodities reached their highest levels for fifty years. The United Nations Food and Agricultural Organisation (FAO) reported that food price indices had risen, on the average, by 8% in 2006 compared with the previous year. In 2007, the food index rose by 24% compared with 2006 and in the first three months of 2008, it rose by 53% compared with 2007. This sudden surge was led by increases in vegetable oils, which on the average increased by 97%, followed by grains with an increase of 87%, dairy products with 58% and rice with 46%. This trend has continued since 2007-2008 and what we are witnessing in the streets of Tunisia, Cairo and Tripoli is partly a reflection of this capitalist crisis.

What does the future hold?

The crisis of capitalist industry in the developed parts of the world is what led to the emergence of neo-liberal free markets and the financial dot-com economy. Industrial production shifted from the West to South East Asia, India and China. The crisis of the financial and service sectors now under way is therefore an indication that there can be no return to heavy industrial production in the West because money capital has exhausted itself in this core sector of capitalism. As a consequence, agricultural production increasingly became a sector to which capitalism resorted in order to engage in some control over global markets. This became a global agri-business phenomenon beginning with the Rockefeller-driven ‘Green Revolution’ in Mexico, India and other Asian countries with the objective of monopolising the seeds.
The ‘Green Revolution’ has now caught up with Africa, but with a vengeance. This is because it is now being suggested that the African Green Revolution must ‘kill two birds with one stone’ in that, in addition to hastening the ‘Green Revolution,’ it has at the same time to adopt the ‘Genetic Engineering Revolution’ or the ‘Gene Revolution’.

The ‘Genetic Engineering Revolution’ or ‘Gene Revolution’ is especially going to influence the trends and resistances to a new global economy, which is being advanced by agribusiness. The gains that ‘agribusiness’ made from ‘Green Revolution’ have strengthened these economic giants to intensify the drive to privatise the seed and plant life as a way of controlling world food production and hence the world economy. This is because the control of food production implies the control of world population and world markets. Indeed the drive towards the ‘gene revolution’ was prompted by the economics of the green revolution which had revealed that the proliferation of the new hybrid seeds in developing markets had reached a stage of declining returns. This is because the high yielding hybrid seed behind the green revolution had an inbuilt protection against multiplication and therefore it lacked reproductive capacity. Unlike the natural open pollinated species whose seeds gave yields similar to its parents, the yield from the hybrid seeds was significantly lower than that of the first generation.

But at the same time, the lower yield of the second generation tended to eliminate trade for agribusiness due to the seeds being produced by middlemen without the agribusiness breeder’s authorisation. In that situation, agribusiness seed breeders tried to prevent the redistribution of the commercial crop seed by the middlemen by creating new forms of monopoly. If the large multinational seed-breeding companies could control the parental seed lines in-house, no middleman competitor or farmer would be able to reproduce the hybrid seed. This is the economics that led the global concentration of hybrid seed patents into a handful of giant seed agribusiness corporations and it is this development that prompted a few of them, such as Monsanto, to lay the ground for the GMO seed revolution.

But the new agribusiness came to comprise entirely new sectors created by the latest developments in genetic engineering, including GMO creation of pharmaceutical drugs from genetically-engineered plants, which Goldberg called ‘the agri-ceutical system.’ This led to an industrial convergence of food, health, medicine, fibre and energy business into a new global monopoly. By this time, agribusiness was ready to capture the food market as a global ‘golden rice bowl.’

But this development was overtaken by the crisis of global capitalism, where agribusiness in general wanted to move faster to deal with the global economic crisis in new ways, especially in ways in which a new industrial economy could emerge. As already noted, the industrial economy had declined and the agricultural economy had become enthralled with attempts by a few agribusiness monopolies to control seed production. After the economic meltdown, the new situation dictated a different response. Rockefeller had already taken steps to create the basis for a new combined industrial, energy and agricultural economy, which has increasingly come to be known by the name ‘the new bio-economy,’

Since the 2007-2008 global economic ‘meltdown’ was especially felt in the area of rising energy and food prices, the new capitalist impulse was to move in that direction because control of energy sources was a control of food production and world population. Suddenly new buzz-words such as ‘bio-fuels,’ ‘agro-fuels’ and ‘land grabs’ began to be heard with ever-increasing regularity throughout the world. At first, the emphasis was on the production of palm oil and corn ethanol. But this was
merely a signal of a much deeper malaise that was calling for a fundamental transition in industrial strategy towards something new in its exploits.

That new trajectory, variously called the ‘new bio-economy’ or the ‘bio-based economy,’ was gathering momentum as well as political clout. Billions of dollars in public subsidies and private investment were being pumped into the energy sector as well as land acquisitions to ameliorate the future energy crisis.

This fundamental ‘shift’ in strategy was taking place in the context in which biotechnology had taken the centre stage in industrial agriculture. Indeed genetic modification had already, with ‘molecular biology’, created a convergence of a number of sectors into one gigantic monopoly called ‘agricultual’, which combined genetically engineered agriculture, pharmaceuticals, energy, health industry and finance into a new ‘industry.’ This combination had become a major industry in its own right after the decline of the manufacturing industry. The new reductionist science in the name of ‘synthetic biology,’ which was emerging with this new drive, was in fact an acknowledgement that ‘molecular biology’ had exhausted itself just as eugenics had done earlier.

The new problem was that the crisis of industrial capitalism had also affected the way ‘science’ was being used to address its crises. The new ‘science’ of ‘synthetic biology’ was a contrived process based on little empirical evidence, but on analogies and assumptions drawn from the failed molecular biology. Although it was being referred to as a ‘maturing scientific discipline’ that combined science and engineering, its foundations were indeed shallow.

An organisation called ECT Group has recently written a monograph entitled: The New Biomass: Synthetic Biology and the Next Assault on Biodiversity and Livelihoods [2010] in which the group describes how ‘synthetic biology’ has ballooned itself into an important ‘new science,’ from a ‘fringe’ science it had been, into a hybrid ‘science’ combining engineering and computer programming. What marked its rise to prominence in a short five-year period into an area of intense industrial interest and investment was the quest by capital to find new avenues for quick investment in new areas, in which this ‘science’ could be of help.

That is why it can be called a contrived technique claiming to be a ‘science’ but, in fact, it is a reductionist mechanism that is not based on a holistic understanding of nature, but on ‘assumptions’ drawn from a failed molecular biology. Its central thesis is that a DNA drawn from a sugar-based molecule consisting of four types of chemical compounds can be organised in a unique sequence to form a code that can instruct a living organism how to grow, function, and behave. The new ‘science’ in fact is directed at monopolising biomass to address the needs of the combined industrial, energy, health and agricultural needs of the twenty-first century. According to the ECT Group, although the word ‘biomass’ has been known for some time, the new use of the term ‘biomass’ marks a specific industrial shift in humanity’s relationship with nature.

Unlike the term ‘plants’, which opens to a diverse taxonomic world of various species and multiple varieties, the new term ‘biomass’ treats all organic matter as though it is the same undifferentiated ‘plant-stuff’ which is a rather crude modern understanding of natural life. Recast as biomass, in the new usage, plants are simply reduced to their common denominators so that, for example, grasslands and forests are redefined commercially as simply sources of cellulose and carbon. In this way, biomass operates as a profoundly reductionist and anti-ecological concept treating plant matter as though it were a homogenous bulk commodity, which is available for exploitation as a
‘commodity’ or a ‘resource.’ The use of the new concept ‘biomass’ to describe natural substances and living organic matter is therefore going to push nature to new demands and limits that we may not be able to sustain anymore.

Contrived as it is, ‘synthetic biology’ is being used for ‘repurposing’ simple cells such as yeast or bacteria "to behave like factories." It is used to design and construct ‘new’ biological parts, devices, and systems as well as re-designing existing, natural biological systems for useful purposes. This will include designing photosynthetic systems to produce energy. ‘Synthetic biology’ will therefore be used as an engineering device for synthesising complex biologically-based or biologically-inspired systems which display functions that do not exist in nature. This engineering device may be applied at all levels of the hierarchy of biological structures – from individual molecules to whole cells, tissues and organisms. In essence, ‘synthetic biology’ as a device enables the designing of ‘biological systems’ in a ‘rational’ and systematic way.

There are other reasons that have led to the rapid emergence of ‘synthetic biology’ as a new paradigm for industry. In fact, it is a transdisciplinary response to a fragmented knowledge field intended to lead capitalism in the 21st century. It has undermined many previous boundaries that existed between the different sciences and between the natural sciences and social sciences. This has resulted in a narrower specialisation within this area of science but which has, at the same time, captured the imaginations of scientists from other scientific disciplines in related fields which apply methods used in non-biological fields like mechanical engineering, electrical engineering and computer science to configure biological systems to achieve important practical purposes. This development has been referred to as "genetic engineering on steroids," which now dominates discussions of "synthetic biology" and, according to the ECT group, constitutes a new sensu stricto definition of the term.

This is perhaps the reason why ‘synthetic biology’ is also being referred to as a set of ‘extreme genetic engineering’ devices and techniques. These techniques involve constructing novel genetic systems by applying engineering principles and synthetic DNA to achieve certain results. In that way ‘synthetic biology’ techniques differ from ‘transgenic’ techniques that ‘cut’ and ‘paste’ naturally-occurring DNA sequences from one organism into another in order to change an organism’s behaviour, such as putting bacterial genes into corn or human genes into rice. Synthetic organisms so created are machine-made life forms or living organisms such as yeast or bacteria to which strands of DNA are added. These organisms are constructed by a machine called a “DNA Synthesiser” using the techniques of synthetic biology. Synthetic biologists can thus build their DNA from scratch using this machine, which can ‘print’ the DNA ‘to order.’ In this way, they are able to radically alter the information encoded in the DNA, creating entirely new genetic instructions and jumpstarting a series of complex chemical reactions inside the cell, known as metabolic pathway. In effect the new, synthetic DNA strands can ‘hijack’ the cell’s machinery to produce substances which are not produced naturally.

But a more broad-based holistic scientific research in genetic science, especially in the field of ‘development systems theory’ and ‘epigenetics,’ has questioned the prominence being attached to synthetic biology’s DNA code. These scientists have pointed out that all manner of complex elements, both within and outside a living cell, influence the way a living organism develops and this cannot be determined a priori by focussing solely on the DNA code. They also point out that even environmental factors such as stress and the weather can influence their development. Accepting this critique, some synthetic biologists have admitted that their carefully designed DNA codes that
work perfectly well on a computer do not work in living synthetically engineered organisms or that they may have unexpected side effects on an organism’s behaviour.

It follows that the likelihood of unexpected behaviours is responsible for the fact that ‘synthetic biology’ has developed no methodology for testing the health and environmental safety implications of a new synthetic organism, apart from its recourse to the ‘substantial equivalence’ dogma, which enables the synthetic biologists to make “a best guess” on how the mixture of inserted genes and recipient organisms may behave. This poses threats to human life since all this is based on analogy and guess-work. This is because the lack of empirical evidence means that the synthetic biologist who invents a synthetic microorganism cannot predict the effects of the release of such an organism on human health and the environment with any degree of accuracy. There are greater ecological risks which are posed if such synthetic organisms are released or accidentally escape from bio-refineries since they can outcross with natural species and contaminate microbial communities in soil, seas and animals, including human beings.

**Are we moving towards a new industrial economy?**

Be that as it may, this has been the basis on which ‘synthetic biology’ has been crafted to contribute to a ‘new industrial revolution’ based on a new ‘bio-economy.’ This revolution will depend on a mix of biomass feedstocks and new technologies, which are supposed to provide solutions to the current world’s energy needs as well as solving the global food and environmental crises. The ‘bio-economy’ that is being touted describes the idea of an industrial order that relies on biological materials, processes and services. Since many existing parts of the global economy are already biologically-based (agriculture, fishing, forestry), proponents of the new concept often talk of a ‘new bio-economy’ to describe their particular re-invention of the global economy merely to clothe the current neoliberal economic and financial policies with new biological technologies and modes of production, without attempting to fundamentally problematise their basic economic assumptions and ideological claims.

Thanks to these emerging technological changes, especially in the fields of nanotechnology and ‘synthetic biology,’ biomass is being targeted by old industry as a source of living ‘green’ carbon to supplement or partially replace the ‘black’ fossil carbons of oil, coal and gas, which currently underpin the industrial economy. Shifts are under way to claim biomass as components of the global industrial economy that draws its resources from the countries that have been subjected to imperial rule for hundreds of years. The new corporate drivers in this direction comprise forestry and agribusiness monopolies; high tech companies promoting biotech, nanotech and software; pharmaceutical, chemical and energy giants; financial institutions and investment banks; and consumer products and food companies.

There are four broad technological platforms that are being lined up to transform biomass into the new industry. These are, first, combustion techniques, which can burn extracts from biomass to the highest energy yield, open combustion with or without oxygen. This technique also includes biomass gasification, which entails burning extracts at very high temperatures with controlled amounts of oxygen as well as plasma arc gasification, which entails heating biomass with a high voltage of electric current.

Secondly, there is the use of chemistry, which can be used to break down carbohydrates in biomass transformation into finer chemicals, polymers and other materials. For instance, thermochemical
techniques can transform lignocellulosic material into hydrocarbons. Also, the extraction of proteins and amino acids yields valuable compounds as well as fermentation techniques, which are sometimes combined with genetic engineering and synthetic biology. These can produce proteins that can be refined further into plastics, fuels and chemicals.

The third platform is biotechnology and genetic engineering which has been carried forward and is being used for both fermentation of plant sugars and traditional plant breeding, which has been its speciality up to now and which have been used for thousands of years in a more organic manner. In ancient Egypt a form of biotechnology was used which involved the use of living organisms in producing food and medicines. This was the case until we discovered inadvertently the usefulness of one-celled organisms like yeast and bacteria. Yeast then was used for brewing beer in ancient Egypt as well as baking bread as well as converting yeast to brew beer.

The scientific study of the bio-chemical processes is less than 200 years old, but current biotechnology has taken us to levels where life forms can be artificially created, which, as we have seen, has reached a stage where it can be a threat to human life itself. Now new genetic engineering technologies have been introduced, which are being used to drive much of the industrial excitement around biomass. These include new approaches to genetic engineering (recombinant DNA) to modify plants to express more cellulose or to more readily break down for fermentation or to grow in less favourable soils and climatic conditions.

'Synthetic biology’ has recently been added to the above techniques and become the fourth platform for the development of novel organisms that are either more efficient at harvesting sunlight or nitrogen or that can generate entirely new enzymes (or biologically active proteins). These enzymes are used to carry chemical reactions or to produce new compounds from plant material. But ‘synthetic biology’ has come into its own as “the game changer” for biomass. It promises in the longer term to expand from the low-tech burning of biomass for electric production to the expansion of the chemical possibilities of turning biomass production into a global biomass grab for the new industrial bio-economy. In this ‘revolutionary’ role ‘synthetic biology’ will produce organisms with multiple traits from multiple organisms. For instance, natural yeast has been routinely used by industry for years to behave like tin bio-refineries in, say, transforming cane sugar into ethanol or wheat into beer. But by altering the yeast (or other microbes), the same sugar feedstock under synthetic biology can be flexibly turned into novel products depending on how the yeast’s genetic information has been ‘programmed.’

This new ‘synthetic biological’ technique can ingest sugar feedstocks and be used to excrete (or ‘produce’) hydrocarbon fuels with the properties of gasoline (instead of the usual ethanol) from billions of synthetic microbes contained in a single industrial vat. The same microbes, if differently programmed, can excrete a polymer, a chemical to make synthetic rubber or a pharmaceutical product. In effect, the microbe has become, with synthetic biology, a production platform for different chemical compounds to make large chemical plants for industrial production. This indeed is the new biological engineering where, by taking little genetic pieces of organism and ‘programming’ them, they can be put together into a whole industrial system. In so doing, a cell can be designed to become a chemical factory for the future. This is the dream.

The above new technological production platforms can be reinforced with nanotechnology. Nanotechnology has its well-known suite of techniques that use and manipulate the usual properties that all substances exhibit at the scale of atoms and molecules. Recently, there has developed an
increasing industrial interest in transforming nano-scale structures found in biomass for industrial use. These include nanocellulose as a new ‘commodity,’ which will take advantage of the long fibrous structure of cellulose to build new polymers, ‘smarter’ materials, nanosensors or even electronics. Research in nanobiotechnology will aim at modifying the nano-scale properties of living wood and other biomass feedstocks to alter their material or energy-producing properties into new industrial products.

This will lead to the creation of new markets for nanomaterials, energy and pharmaceuticals as well as to body armour, medical devices and food products. This transformation will also lead to the production of new forms of batteries, which have already been tried by nanoscientists from the University of Uppsala in Sweden, who have developed high quality paper batteries from coated cellulose fibres from hairy algae called *cladophora*. It is said that these batteries could hold 50 to 200 per cent more charge and be recharged many hundreds of times faster than the conventional rechargeable batteries. One of the scientists has remarked: “Try to imagine what we can create when a battery can be integrated into wallpapers, textiles, consumer packaging, diagnostic devices, etc.” [Etc groups: 42].

The proponents of the bio-economy are however faced with a strategic dilemma, which makes their claims contradictory and unachievable short of annihilating the universe. On the one hand, they claim that the mix of biomass feedstocks and new technologies will provide solutions to energy, food and environmental crises afflicting the global capitalist economy. However, the crises arise not out of a shortage of any of these commodities, but the accumulated crises of the system caused by capitalist greed in search of private profit which has turned into a speculative activity against food production, as we saw above. This is especially so because the overwhelming and uncritical support for the ‘new’ bio-economy is coming from the same monopolies that brought about the earlier crises.

The predictions of these old monopolies, that by 2050 the world population would have increased by 50 per cent and food demand by almost 100 per cent, does not *ipsa facto* mean that the new strategies they are proposing are the only ones that can solve these and related problems, since the same approaches to the population and food issue through GMO production has never addressed the current food requirements. Their warning that climatic change will make, at the very worst, the situation worse is correct, but the solution they propose is incorrect. This is because they prescribe the same kind of solutions they have recommended in the past for agriculture, that more and more chemicals will be required to rescue marginal lands and endangered habitats from crop production. Yet the same policy-makers argue that the experimental technologies they are recommending will not only make everything alright, but instead will mean imposing more demands on the soils and water supplies in the name of replacing the fossil carbons with living biomass. They are not able to provide a solution to this dilemma. According to the ECT group:

“If contained in biorefineries – despite the proliferation of production sites and the quantities involved – we are told there is little danger of environmental contamination and that these new biofactories can be fed sustainably. Those with similar hubris told that nuclear power would be safe and too cheap to monitor; that the chemical age would end hunger and disease; that biotechnology would end hunger and disease, too – and not contaminate; and – only recently – that climate change is probably a figment of our imagination. In other words, gamble with Gaia ... using experimental life forms on the back of contested hypotheses. More than a biomass grab or a Land Grab, this is an Earth Grab” [Ibid: 55].
This Earth grab will be a culmination of the activities of the transnational corporations that have for two centuries been working feverishly to own and control the entire earth for private profit of a few capitalists against the majority of humankind. They have advocated ‘conservation’ of resources only when they served to enhance their future access to those resources for profit and not because they regard such resources as a common heritage of human kind.

The challenges for Africa

As pointed out above, Africa is being faced with a new drive to marginalise its people through hastened combination of the ‘Green’ and the ‘Gene Revolutions’. This is because the land grabs that are under way are aimed at offloading the effects of the global capitalist crisis on the backs of the African people.

According to a report from GRAIN, a civil society organisation monitoring land grabs, those driving the land grabs are in a large part “investors seeking a safe haven for their money amidst crashing financial markets” by buying land cheaply and making it economically productive in a short period of time, “allowing them to make as much as 400% return on investment within as few as 10 years.”

There have been three major reports which have appeared over the last two years that have reported the increasing land grabs in Africa. The first authored by GRAIN appeared in 2008. This report entitled: Land Grab or Development Opportunity: Agricultural Investment and International Land Deals in Africa, was the outcome of collaboration between four international organisations: Food and Agricultural Organisation (FAO), International Fund for Agricultural Development (IFAD), International Institute for Environment and Development (IIED), and the World Bank. The report revealed that over the past 12 months alone, “large-scale acquisition of farmland” in Africa, Latin America, Central Asia and Southeast Asia “had made headlines in a flurry of media reports across the world.” It reported that lands which “a short while ago seemed of little outside interest [were] now sought by international investors to the tune of hundreds of thousands of hectares.”

The report added that governments concerned about the stability of food supplies in their countries were promoting acquisitions of farmland in foreign countries “as an alternative to purchasing food from international markets,” which, as we have seen, were highly volatile and speculative. The report warned that these developments would have local and global impacts, especially for food security in the poor countries were the lands were being grabbed.

The second report by the World Bank, which relied on the GRAIN report, counted 464 projects which had been involved in the land grabs covering an area of at least 46.6 million hectares of land in Sub-Saharan Africa. The report entitled: Rising Global Interests in Farmland: Can it yield sustainable and equitable results, estimated that 21% of these land grab projects were biofuel-driven. The report explicitly acknowledged that policies of the Northern governments promoting biofuel mandates had played a key role in these developments. It pointed out that: “Biofuel mandates may have large indirect effects on land use change, particularly [in] converting pasture and forest land,” with global land conversion for biofuel feedstocks expected to range between 18 and 44 million hectares by 2030.”

The third report, issued by the Friends of the Earth movement in August 2010, looked at 11 countries in Africa and found that close to five million hectares of land – the size of Denmark – had
already been acquired by foreign companies to produce biofuels mainly for Northern markets. This report, entitled *Africa-Up for Grabs: The impact and scale of land grabbing for biofuels*, was focused on the impact of biofuel demand on land acquisitions in Africa. The report looked at the extent of these land acquisition deals for agrofuels and raised questions about the impact on local communities and the environment. It found that, although information was limited, there was nevertheless growing evidence that significant amounts of farmland were being acquired for fuel crops, in some cases without the consent of local communities and often without a full assessment of the impact on the local environment.

The report further pointed out that, whilst many of these land acquisition deals were for food cultivation, there was a growing interest in growing crops for fuel – agrofuels – particularly to supply the growing EU market. The report also pointed out that these land grabs had been taking place against a backdrop of rising food prices which led to the food crisis in 2008. There were, as a result, food riots in some developing countries and in Haiti and Madagascar the governments were overthrown as a result of the crisis. The report pointed out that the crops being used for agrofuels were a major factor in the rising price of food. It added that, as scientists and international institutions were beginning to challenge the climate benefits of this alternative fuel source, local communities and in some cases national governments, were waking up to the impact of land grabs on the environment and on local livelihoods.

**Crisis and opportunity for Africa**

The global capitalist crisis under way, although it affects Africa more than other continents, still offers opportunities for Africa to get out of the crisis. For one thing, the crisis has undermined the very rationale of the capitalist economy. As the Chinese maxim tells us “Every crisis is at the same time an opportunity” and this opportunity should be seized upon.

1. **Link with Emerging Economies**

Economic globalisation that engulfed the world, especially with the neo-liberal phase of the global economy, is beginning to wane. Indeed, the crisis under way now is the crisis of globalisation, which is leading to the strengthening of Emerging Powers and local powers, which include China, Brazil and South Africa. South Africa should lead African states to link with these economies to help Africa disentangle itself from the aprons of the imperialist powers.

Thus, the capitalist meltdown offers Africa and the rest of humankind the opportunity to overcome capitalism. The crisis offers opportunities for disengagement from the Old Boys Networks and imperialist entanglements. China today is moving to enter into different kinds of arrangements with African countries, promising large investments to promote its own development. But Africa can take advantage of these opportunities to reduce its dependence on the former colonial powers as well as the United States. Indeed, continent-wide projects and institutions such as NEPAD were created for this purpose – to create continent-wide economic and infrastructural projects that many small post-colonial states cannot embark on.

2. **Strengthen Local Economies**

In the third article that I wrote for the *Sunday Morning* referred to above, I hypothesised the following ‘Way Forward’ for Africa: First, for the first time, the poor communities and their leaders
should wake to the reality that they need a food security policy as a matter of urgency about which they can no longer dilly-dally. That means they have first to focus on the home market to ensure that food and other consumer products are available for their local consumption.

**Secondly,** the regional markets have to be developed to ensure that commodities that suit local tastes are promoted. This will ensure cross-exchanges between these countries as a source of immediate trade with neighbours. This means we should stress the reinvigoration of indigenous food crops as well as medicinal plants. This is because we cannot develop food security and pharmaceutical industries based on food crops and plants of which we have very little knowledge. This will also promote horizontal development as opposed to multinational ‘vertical integration.’ Only then can we think of producing for global markets. The focus on local and regional markets means developing a local approach to economic management and this will have implications for the way in which we look at the world. There can be no single ‘centre’ that will determine the existence of all human beings everywhere because ‘one-size fits all’ will no longer be allowed to dictate global development. All human beings have to assume responsibility for their own survival and abandon the unilinear epistemology of looking at complex and diverse realities in a one-dimensional manner.

***Thirdly,*** we have to consider the strategy of encouraging cooperative production among the farmers because, with the increasing populations driven by poverty and the great fragmentation of land holdings, it will not be possible for poor farmers to sustain families on the basis of small farm-holdings. The poor families must be encouraged to discuss the issue of land use and the environment seriously for other issues such as global warming is already affecting their capacity to grow crops that can sustain them in periods of climatic change. This is a matter upon which leaders can no longer dilly-dally. They have to abandon failed policies of the World Bank that disregarded farmers’ capacity to innovate and embrace a home-grown approach that builds on what the people know and on local capacities.

New kinds of initiatives are emerging at a grassroots level aimed at developing new ways of managing economic relationships all over the world. These initiatives, which Professor Howard Richard is encouraging in Chile, include the urban-based ‘layered job-creation’ such as: for-profit businesses; the peoples’ economy; government work; non-profit businesses; and community services offered free of charge. All these experiments presuppose cooperative organisation. There are also positive experiences from the local economic responses to the crash in Argentina in 2001. Many ‘informal sector’ activities abound in Africa, Asia and Latin-America that point the way to new discourses about local-based economies, which have the potential to develop into regional and global economies.

**Fourthly,** a cooperative policy presupposes a sound credit policy that can enable farmers to borrow for their production and hence the need to hasten the creation of a new currency that can inform the creation of new credit systems locally. Already informal sector activities are based on local credit arrangements that enable small traders to lend each other money free of interest based on trust. This framework can be expanded into a regional credit system drawing on peoples’ own experiences. We should learn from what the people of Somaliland have done in this respect because they have a very strong local currency that is not pegged to any global currency.

The global financial crisis has and will continue to undermine the dollar as an international reserve currency. This means that, in order to promote regional markets, we shall have to develop regional currencies and credit systems linked to local-regional economic activities, including ‘informal
markets’ and mainstream economic activities, which will provide baskets of commodities that can be the basis of the regional currencies. Asia and Latin America are already developing these ideas and Africa should, though the African Union and the regional economic groupings, embark on this task with urgency.

Finally, the workers and the unemployed middle classes in the developed capitalist countries who are increasingly falling by the wayside, must organise themselves politically and put forward their own ‘packages’ for the taking over of the collapsing industries from the hands of the financial oligarchies who have laid to waste the economies on which they, the workers, have also been dependent. They should not sit silently while they allow the financial oligarchies to ‘reorganise’ and put forward ‘plans’ for their ‘bail outs’ from their governments at their expense. Instead, they should work out their own plans for taking over the industries and managing them on a new cooperative basis, while they also assume responsibility to take over the States whose power structures, based on the exploitation of labour, can no longer be accepted. In so doing, they should attempt to link up with the poor communities in the South and establish a new global civil society on the basis of which a new federated system of states can emerge and on the basis of which a new global economy and market can be erected.

Towards the circular economy

In a recent monograph: From Agriculture to Agricology: towards a Global Circular Economy, I have proposed a new circular green economy called “agricology” as the new mode through which human, crop, plant, and animal reproduction can take place by drawing lessons from the negative experiences of industrial agriculture, by promoting agro-ecological methods of production. Agricology is so named not merely as a play of words and semantics, but to remind us that, while we must pursue agro-ecological, organic farming and other forms of restorative agriculture on a new basis, we must also recognise that agro-ecology must be underpinned by a new epistemology that grounds the new economy on the knowledge of the population who are the real producers, practitioners and restorers of nature.

We have called this epistemology Afrikology [Nabudere, 2010A, 2010B] and this epistemology must combine with agro-ecology and other restorative circular systems to form a coherent, holistic philosophy that can underpin the new system instead of the reductionist contrived ‘sciences’ such as ‘synthetic biology’ and other ‘sciences’. Therefore we argue that agro-ecology in all its forms must be integrated with the epistemology of Afrikology into a synthetic system of ever-reproducing knowledge through ‘the Word’ as peoples’ living languages, through which they produce, communicate and utilise knowledge. Hence, agricology in its dual sense is a restoration of agriculture in its latest form of agro-ecology with its knowledge base, Afrikology. We have already seen that agro-ecology, in the form of organic farming, is based on the strength of the small farmer through replication to restore nature by the act of the wisdom that has been perpetuated from generation to generation through the ‘living word’ from ancestry, which believed in a circular reproduction of nature and the seed.

It is not science or university colleges of agriculture that have ensured such a perpetuation but the ‘living word’ of the languages and the continuous memories of every generation of what they learnt from their heritage. This is why the epistemology of Afrikology holds that for humanity to restore a holistic life that is not fragmented by the modern ‘scientific epistemology’ which separates the body and the mind, we must move towards a holistic, combined and transdisciplinary approach to
knowledge production that has a moral and ethical dimension, which only Afrikology can deliver. We have in fact noted that, in their activities, organic famers try to restore a moral and ethical basis to the restoration of nature, which they believe is sacred.

Afrikology is not an African ethnic epistemology. It is ‘Afrik’ because it is from the Cradle of Humankind located on the African continent. It is ‘logy’ because it is a re-assertion of the divine origin of the word (which the Greeks called logos) from which was derived the language and the written script from which all meanings emanate. The epistemology of the origin of the word as documented in the Memphite Theology of Ancient Egypt is the naming of things by the Heart. This is the original epistemology of the ancient humans as they emerged from the Homo sapiens. This epistemology recognises the central role played by the senses – the eyes, the nose, the ears, the tongue, feeling and the heart. According to this original epistemology, it is the heart that named what the senses had experienced and the tongue that uttered what the heart had named. Hence, it is through the concepts that the heart creates perpetually from these human experiences of the senses that empirical knowledge is established. Thus the Word as originally conceived and preserved through human languages everywhere has perpetually been reproducing itself through dialogue and conversation. It is on this basis that we are able to communicate with one another and it is on this basis that we perpetually create all human knowledge.

But this original epistemology was contradicted by the modern ‘scientific’ epistemology established by the European Enlightenment which separated the heart and mind from the body in order to create a logico-mathematical language. It is this artificial language through which the ‘disciplines’, including the ‘natural sciences’, were created and developed. Hence, it was through this logico-mathematical language that ‘science’ was able to arrive at the conclusion that it is only by ‘science’ that can ‘improve’ nature by making profits for private ends that ‘progress’ is possible. This has proved to be false as we have seen and this has been proven by small organic farmers through their indigenous knowledge. Their knowledge is perpetually created through their languages linked to the original ‘living word’ which has been preserved and perpetuated through their living language.

Therefore we must restore the integral unity of the mind and body by recreating a holistic epistemology that is caring to nature on which we depend. The concepts of Afrikology and agricology have therefore universal implications that apply to all communities and their capacities to create local capacities for their survival through their knowledge created through their languages.

The new approach has therefore GLO-CAL implications in that the future of the global economy will have to be locally based everywhere hence we must be moving towards a GLOCAL economy and a GLOCAL citizenship. That in my view is what the future for Africa holds.

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