Abstract
This paper uses the Institutional Analysis and Development (IAD) framework in tandem with Knowledge Management (KM) tools and Political Economy Approach (PEA) to discuss repetitive missing links between and among stakeholders in food security and employment generation. While innovative ideas on food security are generated by African agricultural scientists/engineers, there have not been sufficient incentives on the part of African governments to harness these potentials for the benefit of peasant farmers and unemployed youth. Consequently, the four stakeholders in food security and employment generation—governments, universities/polytechnics, industries, local communities, and peasant farmers—operate on parallel lines as against collegial interactions within food and employment arenas. This disarticulation between the stakeholders calls for a paradigm shift to a new institutional arrangement whereby the efforts of the stakeholders are synergized. The point of departure of this paper, therefore, is in problem solving and solution seeking. This paper provides case studies to demonstrate principles and practices needed to make Polycentric Planning and Poverty Reduction Strategy (PPPRS) resolve food and employment crises in the continent. PPPRS is capable of stimulating and strengthening collegial interactions between the stakeholders in their present day realities to achieve food security and employment generation. To this end, African Food Security Model (AFSM) and African Employment Generation Model (AGEM) are adopted for application. Under this proposed arrangement, it is strongly believed that by networking with stakeholders, agricultural innovations from universities would be developed by industrialists and consequently, popularized by governments among peasant farmers. The adoption of innovations by peasant farmers would help in transforming agricultural resources into semi-finished and/or finished products. This will reduce wastages; strengthen economic capacity of peasants, thus, enhancing higher productivity in farming and food security as well as generating employment opportunities.

Keywords: Human Rights, Food, Employment, Poverty, Polycentricity, Planning, Africa

Background to the Study
This paper analyses the relationship between human rights, food security and employment opportunities in Africa from polycentric planning and poverty reduction perspective. The human development challenges confronting Africa are indeed formidable. The number of people living in extreme poverty (on US$1 or less a day) rose from 217 million in 1990 to 290 million in 2000, the majority of whom are women (ECA, 2005d). This deplorable condition of living in Africa is unjustifiable in the light of abundant resources endowed to the continent. It is pathetic that Africa is not only failing to eliminate poverty, but also is experiencing an increase in the number of people living in extreme poverty (UNDP, 2008; Olowu, 2009:2), hunger (Diouf, 2010) and unemployment (NGO News Africa, June 2&9, 2010).
One of the three factors that is important in understanding how a society functions, as identifies by Tocqueville (1966), is “the peculiar and accidental situation, which providence” places people. This could refer to the environmental and material conditions that are available to people in fashioning their lives. The type of resources within an environment, to a large extent, other things being equal, determines the fortunes of the people in that environment. It is on this note that this paper argues that African leaders have the responsibility of protecting the rights of their citizens, and at the same time, investing African resources in providing enabling environment for decent standard of living, securing food and generating employment opportunities for their citizens.

Akinola (2007f) notes that there is a high level of dis-articulation between African governments, universities and the people, which culminate into a high rate of unemployment that is self-embarrassing and disastrous for the continent. Statistics show that South Africa has a jobless rate of 32.4%. The figure for Nigeria is 19.7%, while the situation is worse in Namibia with 50% unemployment rate (NGO News Africa, June 2, 2010). Though shelter is considered one of the three basic necessities of life (the other two are clothing and food), the conducts of some African governments have no respect for the rights of their citizens to shelter. This position finds immense support from several cases of demolition and forced eviction of citizens from their homes across Africa; thus, confirming the high level of human right violation and dehumanization in Africa Angola (Croese, 2010), Nigeria (Harris, 2008; Ogun, 2009; Iwuchukwu, 2009) and South Africa (Neocosmos 2009).

The failure of African governments on matters of development give room for local people (through self-organising arrangements) to perform successfully in the same areas where governments have faltered. For example, recent findings confirm that African citizens at local/community level exercise socio-economic and cultural rights outside the formal structure of governance. They do these by investing their sovereignty horizontally in one another through collective action and self-organizing arrangements, thereby able to respond to some challenges by exploring pre-colonial governance heritage. By so doing, to certain extents, they have been able to address their daily needs (see Ayittey, 1991; 2006; Olowu, 1999; 2006; Ayo, 2002; Sawyer, 2005; Akinola, 2004; 2007a; f; 2008b; 2009a; b; 2010a; 2011a). People in Africa engage in a myriad of socio-economic and techno-political activities that are drivers of development. Unfortunately, they are neither properly documented nor recognized by official statistics. The fundamental questions are: How did these peoples cope and how are they coping? What lessons can we learn from these people-centred creativities and adaptation strategies? How can we reconstruct and reconfigure the public sphere in Africa to mainstream the citizens into decision making arena where they can exercise their fundamental human rights?

The point of departure of this paper, therefore, is in problem solving and solution seeking. Following the principles of Robert Owen’s Industrial village (1799), this paper uses the Institutional Analysis and Development (IAD) framework in tandem with Knowledge Management (KM) tools and Political Economy Approach (PEA) to discuss repetitive missing links between and among stakeholders in food security and employment generation. This paper provides case studies to demonstrate principles and practices needed to make Polycentric Planning and Poverty Reduction Strategy (PPPRS) resolve food and employment crises in the continent. A polycentric approach to food security and employment generation emphasizes people-centred and community-oriented development in ways that emphasize inclusiveness,
nondiscrimination, accountability, transparency and popular participation. Polycentric planning and poverty reduction strategy (PPPRS), as an adaptation strategy, is the process of mainstreaming the poor in decision making through community institutions and people-oriented civil society such that governments' policy on poverty reduction pragmatically reflects the wishes and aspirations of the poor (Akinola, 2010i). This is one of the reasons this paper is set to ensure synergetic interactions among strategic stakeholders in food and employment.

This paper adopts African Food Security Model (AFSM) and African Employment Generation Model (AGEM) for application (see Akinola, 2006j; 2007f; 2010a,i, 2011a; 2012o). Under this proposed arrangement, it is strongly believed that by networking with stakeholders, agricultural innovations from universities would be developed by industrialists and consequently, popularized by governments among peasant farmers. The adoption of innovations by peasant farmers would help in transforming agricultural resources into semi-finished and/or finished products. This will reduce wastages; strengthen economic capacity of peasants, thus, enhancing higher productivity in farming and food security. Similarly, the application of PPPRS would help in actualizing five important issues: (1) re-orientation of values; (2) food security; (3) wealth creation; (4) employment generation; and (5) poverty reduction. Invariably, this strategy would help in constituting communities as the engineers and drivers of economic forces at various local governments in Africa.

### The Problematics of Human Rights, Food And Employment in Africa

The post-independent African states as constituted are not designed and equipped to respond to the needs of African people as they are unable to articulate transforming projects or mobilize societies around such projects. Policies adopted since political independence have reinforced the state institutional character and its inability to progressively enhance the living standards of majority of the African population. The elite are alienated in terms of the educational curriculum introduced by the colonial governments. The curriculum did not pay much attention to the study of African culture, its roots and adaptive education that can help the society to release the potentials and capabilities of the people. This problem still persists till today as higher institutions in the continent only train students for white collar jobs instead of creating jobs using local resources. At the same time, African governments depend on ideas from developed countries, which are in most cases at variance with Africa's ecological conditions. This initial mistake opened the way for importation of foreign ideologies: political, agricultural, technological, industrial, and security spheres. Consequently, the "disconnect" from the roots is manifested in several sectors of African landscape (administrative, educational, political, economic, social, judicial and security).

Because the rights of African people are denied them by their leaders, the role of citizens in sharpening public policies to ensure error-correcting system is vacuumed. Consequently, policies are at variance with realities, a condition that has further deepened the gaps and disconnect between leadership and the people, where the former cannot be checked by the later. This has created the problem of parallelism in governance whereby leadership operates on parallel line with the people. Since parallel lines never meet, it can be inferred that there is no common thought between the people and their leaders and therefore no people-centred development.
Demographic Conditions and Food Insecurity

The denial of human rights in Africa has resulted into low human development in all ramifications. Average life expectancy in sub-Saharan Africa is 49.6 years, the lowest for all world regions (UNDP, 2008). Africa's real gross domestic product (GDP) per capita is the lowest (US$1,998) among all regions compared to an average of US$5,282 for all developing countries, and US$9,543 for the whole world (UNDP, 2008:232). The mortality rates for infants (those under one year) and children (between ages one to five years) are 102 and 172 per thousand live births, respectively, the highest among all regions of the world (UNDP, 2008:264). Besides this, only 76% and 65% of infants in sub-Saharan Africa are fully immunised against tuberculosis and measles, respectively, a dismal comparison to other world regions (UNDP, 2008). Not surprisingly, over 50% of human beings in sub-Saharan Africa live below the global poverty line (UNDP, 2008). Over 265 million people in sub-Saharan Africa are malnourished and 30% of the population suffers from hunger (Diouf, 2010). The global nature of the problem makes it more problematic for African countries that depend on food aid and importation.

One in three Africans is chronically hungry, despite $3 billion spent on food aid for the continent annually and $33 billion in food imports. Much of the $33 billion that Africa spends to import food could be better diverted to domestic production for regional and global trade, contributing to poverty reduction and repositioning Africa in the global economy (Dione, 2010). Because of ineffective and unaccountable bureaucracies in Africa, public enterprises have failed; thus, giving room for private sector entrepreneurs to spearhead development (see Easterly, 2005). For example, it was recently reported by the UNECA and AU that **Nigeria has failed to make progress in diversifying its economy.**

Unemployment in Africa

The fallout of the dis-articulation between African governments, universities and the people (the supposed beneficiaries) is the high rate of unemployment which is self-embarrassing and disastrous for the continent. Statistics shows that South Africa has a jobless rate of 32.4% - six million of a total potential workforce of 19 million (NGO News Africa, June 9, 2010). The figure is as high as around 70 percent in Grahamstown, South Africa; the most affected are young people, including graduates (Pambazuka, 2010). In Nigeria unemployment has increased to 23.9% as at November 2011, as against 21 per cent in 2010 (Sawyerr, 2012). High unemployment rates among Maghreb-educated graduates are disturbing: Morocco (26.8%), Algeria (19.3%) (Sawahel, 2011) and Tunisia (30%) (UWN, 2011; Saleh, 2011). Similarly, 94% of the unemployed in Egypt are in the age group 15-29 years (Sawahel, 2011). The figure in Namibia is 50% (NGO News Africa, 2010) in spite of an immense wealth in natural resources such as diamonds, copper, uranium, gold, silver, lead, etc. in that country. According to Kokutsi (2011a), unemployment is also growing among graduates in Ghana though there is no official statistics yet to buttress the claim. This problem has been responsible for Africans searching for greener pastures. This explains why about 10,000 people were drowned while trying to cross the Mediterranean from Africa (Akinsola, 2007:51; Popham, 2007:9). It has been pointed out that this high level of unemployment among young men and women in Africa is a “ticking time bomb” (Mutume, 2006:7).

Land Grabbing, Peasants' Impoverishment and Forced Eviction of Citizens

Another issue that is pertinent for discussion is the issue of the current land grabbing in the continent. Because Africa has been lethargic, the current global food crisis has spurred other nations into searching for and grabbing 'available' land for commercial farming in Africa. For example, over 30-million hectares in
Almost 30 African countries have been auctioned to a host of corporations and governments from China, India, Japan, Asian countries, Saudi Arabia and other Gulf States and Libya (Sharife, 2010). Analysis questions the assumption that increased investment in agriculture is beneficial for all parties involved. For example, history and evidence across the globe confirm the fact that corporate agribusiness has negative social and economic consequences in developing countries. While some independent farmers were driven off their land, some others were turned into plantation workers with poor wages (Daniel and Mittal, 2009). If African governments cannot defend the rights and livelihoods of their people, is there any hope for the continent’s future? Given the fact that majority of African people engage in farming, where will they turn to when their leaders have sold their land to outsiders who control and determine their destiny?

Another common denominator of trampling on the rights of citizens in most African countries is ‘rebuilding by demolition’ and forced eviction of citizens from their homes. It is true that society is dynamic and infrastructure and urban settings of yesterday may not be adequate for today and tomorrow. But there are minimum standards and methods of renewing urban centre such that the welfare of citizens is not jeopardized. For example, renewal of urban slums is usually preceded by resettlement scheme that provides accommodation for the affected citizens temporarily or permanently and the citizens are regarded as agents of change in such programmes.

The cases in Africa are disheartening. In Angola, 2,000 homes were destroyed (Croese, 2010), over 75,000 houses in the Nigeria’s capital, Abuja were demolished (Harris, 2008; Ogun, 2009). Similarly, the ‘democratic’ government of Nigeria launched a military onslaught against the people of Odi in Bayelsa State in 1999 and used force in May 2009 against innocent people in Gbaramatu, which culminated into genocidal attack in defiance of the Constitution (Iwuchukwu, 2009). The government of South Africa also deployed violence, demolished shacks and murdered its citizens between September and October 2009 in Durban (Neocosmos, 2009).

Theoretical Underpinning: Collective Action, Food Security and Employment Generation
The theories of collective action suggest that individuals under certain institutional arrangements and shared norms are capable of organizing and sustaining cooperation that advances the common interest of the group in which they belong (E. Ostrom, 1990). This line of thought recognizes that human beings can organize and govern themselves based on appropriate institutional arrangements and mutual agreements in a community of understanding. This is the fundamental of the Institutional Analysis and Development (IAD) framework. The IAD believes in institutional arrangement designed by people who cooperate based on rules and constitution of their choice, and thereby are able to resolve socio-economic and technopolitical problems which other people (external to their conditions) are not capable of doing for them.

The IAD considers the role of evolution, culture, learning and social norms in the discourse on collective action (E. Ostrom and Walker, 2003). Institutional structures that people have developed over the years avail individuals in the community to make inputs to development in their locality by contributing towards projects (labour, finance and materials) and decision-making in political arenas in rural settings. According to Sawyer (2005), institutional analysis helps us to better understand how individuals within communities, organizations and societies craft rules and organize the rule-ordered relationships in which they live their lives. To understand institutions, according to E. Ostrom (2005), one needs to know what they are, how and
why they are crafted and sustained, and what consequences they generate in diverse settings. Understanding institutions is a process of learning what they do, how and why they work, how to create or modify them, and eventually how to convey that knowledge to others.

The study of institutions using the IAD has produced the concept of polycentricity that recognises the potentials of individual citizens in ordering public affairs. Polycentricity is a means of achieving bottom-up governance for poverty reduction in developing countries. According to Vincent and Elinor Ostrom (2003), polycentricity simply means a system where citizens are able to organize, not just one, but multiple governing authorities, as well as private arrangements, at different scales. In a polycentric system, some units are general-purpose governments, whereas others may be highly specialized. Such a system may be special districts, private associations, or part of local government. These are nested in several levels of general-purpose governments that also provide civil equity as well as criminal courts.

Using the three key assumptions of political economy approach to policy analysis, this paper applies the IAD to analyse how the peoples of Africa can solve their problems that are created when they seek to live together as a people and interact in neighbourhoods, communities, cities, local governments, states/provinces, countries or region within Africa. The three key assumptions are: (1) Human behaviour is purposive; (2) People's behaviour is shaped by incentives and constraints/rules; and (3) People are intelligent and creative (Bickers and Williams, 2001). The political economy approach to policy analysis asks how individual values of preference get translated into collective processes and outcomes. There are ranges of institutions that can be used for translating individual preferences into collective policy choices national government, state/provincial, local. There are strengths and weaknesses of governments and markets as institutions of collective action (Bickers and Williams, 2001).

The central actor in the political economy approach to policy analysis is the individual for two reasons. First, individuals and their actions are what lead to collective problems. Second, individuals, when armed with the conceptual tools of political economy become instruments for understanding and reforming collective practices. Individuals can and should master the tools and concepts of policy analysis so as to better understand how collective enterprises operate in the way they do, why they sometimes exhibit failures and what options may be available for improving policy performance. The approach enables us to see individuals and the communities in which they live, thus, has much to reveal about modern complex societies (Bickers and Williams, 2001).

Implementation of polycentric privatization programmes could be patterned after Robert Owen’s Industrial village (1799) (Podmore, 1906). This is popularly called English Cooperative Movement in 1789. Owen believed that the environment shape human destiny and therefore the environment had to be improved. He and his partners built industrial village for his weaving business at New Lanark in 1799. The workers were constituted into cooperative and he subjected them to better pay, shorter-working hours and better housing. He made provision for the education of various categories of people because he believes that poverty could be fought and eradicated through mass education (Podmore, 1906).
It has been confirmed that community institutions in Africa possessed self-organizing capabilities through which community members relate with one another in a rule-ordered relationship, sharing ideas, and using their own initiatives and institutional potentials to address problems of daily existence. Examples of local people's provision of public goods using available social capital (associations) are well documented throughout African continent (McGaffey, 1992; IDS, 2001; Okotoni and Akinola, 1996; Akinola, 2000; 2003a; 2004; 2005d; 2007a; f; 2008b; 2009a; b; 2010a; 2011a).

According to Hyden (2006), there is a vibrant associational life in African societies with a strong sense of community among diverse peoples of Africa. It is in this light that Sills (1959), about four decades ago, predicted that since a considerable body of research and experience has demonstrated that voluntary/mutual associations in diverse communities have accomplished specific purposes; can't they be utilised as instruments of planned change? The type of trust and cooperation that local people have instituted among themselves to confront their daily challenges reinforces the notion that the people represent a formidable force necessary to drive changes and transformation to better their societies (Akinola, 2008b). It is, therefore, imperative that farmers' ecological and cultural contexts be properly studied and understood before any policy is formulated.

If we share with the collective action theories that institutions matter in terms of their influence on cooperation, then the problems of food insecurity and unemployment in Africa can be addressed if appropriate institutional arrangements are put in place. If such institutional arrangements can produce four fundamental imperatives of collective action—collegiality, mutual trust, reciprocity and shared community of understanding then it is possible for African people at community and local level to cooperate, especially when they perceive that the outcome of the interactions will be beneficial to them all. This is evident in an experiment on collective action and polycentric privatization on food security and poverty reduction carried out in Irepodun Local Government Area of Osun State, Nigeria between 2005 and 2006.

**Result of Experiment on Irepodun Investment Cooperation (IIC) in Osun State, Nigeria**

This section reports findings of research that centred on adaptive, effective know-how and institutional mechanisms capable of re-orientating African governments in the struggle against underdevelopment and poverty. This in turn inspired the establishment of the Irepodun Investment Cooperation (IIC) in Osun State, Nigeria. ICC represents 16 associations working with the local government council to harness local resources and generate employment for local youths. It is structured as a joint venture (through shareholding) open to all interested persons (and organizations) residing in the community. All workers in the local industries and factories should be given opportunities and encouraged to purchase shares and be part of owners. This will insure a strong commitment to the survival of local industry. Yet the Osun State Government, impressed by the potential of the Irepodun Investment Cooperation model, launched a similar strategy for economic self-reliance, food security, employment generation and poverty reduction. Amazingly, rather than consult and collaborate with the local initiative, the government opted to visit and study a similar program in China! (Akinola, 2007f; 2008p). If any African government, university or private organization could act as a facilitator for the implementation of this strategy on a pilot scale in any country in Africa, the emergence of polycentric privatization, peasant empowerment and local industrialization can be regarded as a new effort at creating an alternative model for food security, employment generation and poverty reduction built from the grassroots.
Food Security and Employment Potentials in Africa

Tree and Food Crops Potentials: Benue State in the middle belt of Nigeria is synonymous with food production, and is called “The Food Basket of the Nation”. Notable agricultural products include: yam, cassava, maize, soya beans, ground nut, beniseed, citrus trees and palm trees. Similarly, Oke-Ogun area of Oyo State, Nigeria also exhibits the same features, which earned the area, the title, “The Food Basket of Oyo State.” According to Oni (2002), to cultivate a 50 hectare plantation of pineapple, investors will need N1.1 million per annum. A minimum of 1,200,000 fruits will be picked annually and at conservative price of N25 per fruit, a minimum of N30 million will be realized. In this respect, Amuye Faforiji in Atakumosa East Local Government Area, Osun State has been noted for the cultivation of different types of fruits that could be processed into concentrates for export to other companies producing fruit drinks (see Akinola, 2002; 2005b). For example, some 300 plantain suckers were planted by the author using poultry wastes as organic fertilizer in August 2007. The amazing result is that the land has been rejuvenated with bountiful harvest. These types of food potentials exist in several countries across Africa.

Livestock, Fisheries and Rabbitry Potentials: Environmental resources such as green vegetation and water bodies that can support livestock and fisheries are abundant across Africa. Unfortunately, many of these potentials remain largely untapped, while we continue to import protein from other countries. For example, Professor Martins Anetekhai at the Lagos State University, Nigeria teaches and practicalizes fishery and thereby turns knowledge to wealth. He took a loan of N0.2 Million in 2002, invested it in fish farm which as at 2007 worth N30 Million (The Punch, Tuesday, October 23, 2007, p. 47). Another example was a personal experiment that I carried out between October, 2005 and February, 2006 which shows that three rabbits (2 female, 1 male) multiplied to 22 rabbits within three months. By projection, using simple arithmetic (for four generations), the number would be 380 within a year October, 2005 to October, 2006 (Akinola, 2006b).

Innovation potentials and knowledge generation
Penning de Vries (2005) link the emergence of ‘bright spots’ or community success to a number of conditions and the presence of certain drivers. While some of the conditions are incentives accruable to participants, drivers can come in the form of strong individuals, new community organizations, innovative technologies and practices or external agents. The introduction of innovations by researchers to farmers and the consequent success of the efforts in Ng’uuru Gakirwe in Tharaka district, Kenya attracted many farmers who later benefitted from the programmes. The innovations included irrigation scheme, processing, packaging and export of products abroad. The Ng’uuru Gakirwe irrigation scheme in Tharaka was able to expand from 135 farmers in 1988 to over 430 farmers in 2000 simply because research efforts and training of local farmers changed an important exogenous variable (arid condition) through irrigation and new techniques that constituted favourable factors (processing and packaging). The farmers specialized in the production of high-value organic herbs, fruits and vegetables, accompanied by processing, packaging and sale in niche and export markets abroad. Average incomes of farmers rose from almost zero to over $300 per farmer per month (Penning de Vries, 2005).

Examples of creative innovations from Africa that can be replicated to enhance development abound: (1) Investigations carried out by the Department of Agricultural Engineering, Obafemi Awolowo University, Ile-Ife, Nigeria demonstrated a saving of 20 work-days when farmers used mechanical methods designed by agricultural engineers, instead of the traditional methods (Akinola 2002); (2) The Department of Food Science and Technology of this same Nigerian university, using physical principles, has developed effective
and viable methods of food preservation (see Taiwo, et. al., 1997; Enujiugha, et. al., 2002; Akanbi, et. al., 2006). The Songhai Centre in Porto Novo, Republic of Benin is renowned for training in entrepreneurship opportunities in agribusiness, ranging from animal feed/feed processing, fish farming, mushroom farming, rearing, snail farming, dry season vegetable production, bio-gas production to piggery (Adebisi, 2006:29).

It is important to note that people are also transforming indigenous knowledge inherited from parents to confront present day realities. In Saki, Oke-Ogun area of Nigeria, people in intermediate-technology institutions (notably in the fabrication of aluminium cooking utensils), blacksmiths and iron-smelters, iron-benders and welders, fabrication and designers associations inherited their skills from their grandparents (Akinola, 2007f). In the particular case of Nigeria, there has been virtually no attempt by government to establish small scale industries where adapted technological skills can be used in agriculture to increase food production. As a result, produce, notably yam flour elubo gari, beans, maize, tobacco and citrus fruits perish during the harvest season because there is no system of preservation. Yet there are many community-based institutions that have adopted an intermediate agro-allied and spare-parts manufacturing strategy.

This is just a small sampling of innovations that can, but are not, benefiting more African farmers. The goal is to empower these innovators so that their potentials and skills can be harnessed towards economic development in the continent. Whereas, food security, employment generation and poverty reduction require the widespread and continuous invention and adoption of new technology in the form of both new methods of production (process innovation) and new products (product innovations), vast resources and energies of farmers are wasted perennially due to non-availability of appropriate technologies for food processing and storage.

**Specific Ecological Agriculture Interventions in Africa**

Data from the Tigray project in the Tigray region in Ethiopia between 2002 and 2004 showed that, on average, composted fields gave higher yields, sometimes double, than those treated with chemical fertilisers (Araya and Edwards 2006). Other specific examples summarised by Hine and Pretty (2008), Parrott and Marsden (2002), Pretty and Hine (2001), and Scialabba and Hattam (2002) are listed:

1. Soil and water conservation in the drylands of Burkina Faso and Niger have transformed formerly degraded lands. The average family has shifted from being in cereal deficit of 644 kg per year (equivalent to 6.5 months of food shortage) to producing an annual surplus of 153 kg.
2. In Tigray, Ethiopia, yields of crops from composted plots were three to five times higher than those treated only with chemicals. Some 12,500 households in Ethiopia have adopted sustainable agriculture, resulting in a 60% increase in crop yields.
3. Projects in Senegal promoted stall-fed livestock, composting systems, green manures, water harvesting systems and rock phosphate. Yields of millet and peanuts increased dramatically by 75% to 195% and 75% to 165% respectively.
4. In Kenya, 500 farmers on some 1,000 hectares have seen maize yields improve from about 2 to 4 tonnes per hectare (t/ha) following the application of soil conservation, soil fertility and organic agriculture methods. Similarly, a range of biological pest management methods together with legumes, cover crops and green manures for soil fertility improvement resulted in a doubling of beans and groundnut yields from 300 to 600 kilograms per hectare (kg/ha) in Western Kenya.
5. In Eastern and Central Kenya, smallholder farmers have been trained in natural soil fertility management; integrated environmentally friendly weed, pest and disease protection; on-farm soil and water conservation techniques; and farm level seed conservation, with a resulting 50% increase in productivity and 40% increase in income. More than 1,000 farmers in low soil fertility areas in the north rift and western regions of Kenya increased maize yields to 3,414 kg/ha (a 71% increase in productivity) and bean yields to 258 kg/ha (a 158% increase in productivity) as compared to traditional agriculture, by incorporating soil fertility management, crop diversification and improved crop management.

6. The integration of pond fish culture into low-input farm systems with some 2,000 farmers in Malawi increased vegetable yields from 2,700 to 4,000 kg/ha, with the fish ponds producing the equivalent of 1,500 kg/ha of fish and proving a new source of food for households. The projects here were those embarked upon, as experiments, by FAO and other international organizations. African governments are highly apathetic and non-responsive to the adoption of these innovations due to some factors. Hence, the long years of operations of these organizations have not yielded expected results. How do we ensure that African governments adopt these innovative ideas for their people?

Repositioning Human Rights for Food Security and Employment Through Polycentric Planning and Poverty Reduction Strategy in Africa

In order to reposition human rights for food security and employment in Africa, political factor must be given serious consideration. The contention of this paper is that, since political factor determines the operation of other sectors of economy, the starting point of repositioning human rights for food security and employment is to commence with the application of strategies that can restructure African public sphere so that citizens can have direct contact with their leaders on regular basis. As a matter of priority, once the public sphere is restructured, the next step to take is to embark on programmes that can enable citizens to play central role in decision making pertaining to resources distribution and allocation, budget preparation and monitoring, projects siting and location, project monitoring, etc. Such decisions should be in areas of food security, employment generation, environmental auditing, conflict prevention and resolution, etc.

Consequently, the paper suggests the need to restructure the public sphere for the emergence of a new working relation between public officials, scholars and citizens in Africa. This new working relation requires that African scholars and African public officials adopt alternative development strategy that is Africentric, people-centred and community-oriented. In this vein, the paper advances polycentric planning for reconstructing the public sphere through appropriate institutional arrangement that is capable of connecting the stakeholders in development. In order to restructure the public sphere in Africa, the paper further suggests African Public Sphere Restructuring Model (APSRM).

APSRM is conceptualised as a deliberate act of setting up Self-Governing Community Assembly (SGCA) for deliberation, collegiality, mutual trust, reciprocity and shared community of understanding (Akinola 2010a, 2011a). APSRM emphasises two elements deliberation and deliberateness/action. APSRM requires that African scholars should take the lead in this new arrangement. It derives inspirations and working mechanisms from fourteen (14) African development models (see Akinola, 2007f; j; 2008f; p; 2010a; 2011a).
**Self-Governing Community Assembly (SGCA)**

As Vincent Ostrom (2000: 271) has reminded us, the challenge in democratic societies is to extend the horizons of knowledge and skills by learning to work with others in ways that enhance error-correcting capabilities. It is, therefore, imperative to set up a system of checks and balances that characterised pre-colonial African political system and adopt it for citizens' enlightenment on socio-economic and techno-political affairs. This requires the setting up of SGCA as contained in Akinola (2010a). The SGCA is composed of representatives of governments with their agencies, higher institutions, community institutions, occupational groups, women groups, youth, etc.). Since SGCA is a multi-tasks assembly, one of its operations will have to do with education and enlightenment of citizens so that public officials and the people operate within shared communities of understanding. Some of the critical questions that citizens need to address at the SGCA include:

1. What should governments do in terms of human resources development and utilization and how should they do it?
2. What can people do alone without government intervention?
3. What can people do in tandem with government?
4. What can people do in conjunction with local industries?
5. What can people do with agricultural and other natural resources in their communities?
6. How can people handle these issues in numbers 1 to 5?
7. What should be the role of local people in shaping electoral system before, during and after elections?

When citizens are able to realise and take full responsibilities in shaping and re-shaping socio-economic and techno-political configurations to suit their daily aspirations and yearnings through active and constructive interjections, then shared communities of understanding will be established. This will provide fertile ground for the adoption of successful practices elsewhere such as Alaska solution.

**Implementation Strategy for Polycentric Planning and Poverty Reduction Strategy**

In the light of the above, it is clear that the crisis of food and employment due to the neglect of human rights in Africa could be addressed if a new institutional arrangement and planning mechanisms that are capable of bringing all the stakeholders together for regular discussions and decision making are designed and implemented. Such a public sphere restructuring mechanism should regard the existing self-organizing and self-governing arrangements as well as associational life that have proved effective as building blocks for re-constituting democratic order from the bottom up in Africa. The self-governing institutions can act as checks and balances on the local government officials. It is believed that when the participants and stakeholders at the community assembly are able to sit together, discuss their common problems and craft working rules together, a shared community of understanding will be established. The interactions between the governments, universities and community self-governing institutions will eventually produce new working relations that will be people-oriented.

Polycentric Planning and Poverty Reduction Strategy (PPPRS) will enable the poor to become more influential in order to engage with their own governments in order to better influence decision making process on food and employment matters (Akinola, 2009b; 2010a; b). A polycentric approach to human development emphasizes people-centred and community-oriented development in ways that emphasize inclusiveness, nondiscrimination, accountability, transparency and popular participation. Using PPPRS, food security and employment generation are discussed.
Pilot Project: Food Security and Employment Generation

Food security and employment generation models are concerned with how people can work together at community level to address the current food insecurity and unemployment crisis. It is suggested that any organisation and some universities in tandem with specific governments could kick start food security and employment generation programmes by applying AFSM and AGEM through the implementation of Polycentric Planning and Poverty Reduction Strategy (PPPRS) in selected countries in Africa. The proposal is designed to experiment food security project in specific food related areas and provide job opportunities for people at the community level. In doing this, the organization will:

(i) demonstrate how to develop entrepreneurial capability by combining factors of production (land, labour and capital) toward food production and employment generation in Africa;

(ii) establish university/industry partnerships in translating innovative ideas into machines that are capable of enhancing agricultural productivity; and

(iii) establish a strategic and robust corporate social responsibility by utilizing vast agricultural resources in agro-based industry to provide affordable food and generate employment for people at the community level.

Within the academia, agricultural engineers, food scientists, and food technologists would have to be involved in the design of machines for food pressing, food storage and food packages. The implementation strategy of the proposed project spans five stages (see Akinola, 2008f; o). Food-related activities and employment generating ventures that could be embarked upon include:

(i) Large-scale mechanized farms in the cultivation of yam, cassava, maize, guinea corn, fruits, etc.

(ii) Food processing plants yam flour, cassava flour, maize, guinea corn, fruits, etc.

(iii) Animal husbandry section fishery, poultry, rabbitry, pigry, goatry, cattle and other ruminants.

During the first phase of the programme, extra care should be taken in involving the public officials due to their sycophant tendency. The representatives of self-governing institutions are participants directly involved in the programme. However, during the second phase after the programme might have taken proper shape, the state agents could be regarded as full participants. The implementation of food security strategy is highlighted under fifteen stages (for details, see Akinola, 2008p).

African Food Security Model and Implementation Strategy

In order to respond to food crisis and the needs of the farmers who are the majority in Africa, polycentric governance and polycentric privatization that could break the monopolistic profiteering of both local and international capitalist bourgeoisie should be adopted. It is important to terminate the vicious cycle of exploitation and underdevelopment by processing food crops into semi-finished and finished products before packaging them for export. To this end, African Food Security Model (AFSM) is designed.

African Food Security Model (AFSM)

African Food Security Model (AFSM) is conceptualized as the combination of factors of production (land, labour, capital, entrepreneurship and technology) through appropriate institutional mechanisms that synergize the efforts of the key stakeholders (governments, universities/polytechnics, industrialists and farmers) in food production (process and storage). AFSM is diagrammatized in Fig. 1. The first part of the diagram displays the failure of conventional food security policies in Africa as exemplified by parallel
operations of the stakeholders that has resulted into food crisis. This failure calls for a paradigm shift in food security to a new institutional arrangement whereby the efforts of the stakeholders are synergized through food security mechanism (the second part). AFSM suggests that the first step is a value re-orientation. Extractive economies that dominate parts of Africa do nothing to promote entrepreneurship, ingenuity or creativity in Africa. A shift towards the more inward-looking and utilization of abundant agricultural resources through adaptive technology to promote agriculture would boost local industrialization.

Fig. 1: African Food Security Model (AFSM)
Source: Adapted from Akinola (2007f:233).
This new orientation, invariably, determines: (1) the utilization of agricultural resources; (2) the development of adaptive technology and (3) the ownership of local food industries through shareholding (polycentric privatization). Abundant agricultural resources can only be utilized to the fullest capacity if technology is adapted for planting, harvesting, processing and storage. Emphasis should be shifted from 'developing technology for society' to 'developing technology in the society' in order to address societal needs more effectively. This notion is supported by Feenberg (1999, 2002) when he suggests that technology development is a practise of co-creation involving social and material aspects, social and natural sciences, and societal and technological developments. Similarly, Ruivenkamp (2003) emphasized that technology has to be developed with intended users and thereby creating the environment needed for adoption; people wanting technology that are developed together with them.

**AFSM** believes that appropriate technology is a pre-requisite of local industrialization. This, in turns, should be pursued through polycentric privatization to enable local citizens to be joint owners of local industries. Invariably, polycentric privatization would enable the redistribution of the outcome of economic growth. Thus, the present centralized privatization programme that perpetuates inequality among the peoples of Africa would be reversed and wealth creation becomes possible for peasants and citizens. The outcome of the new institutional arrangements is in two parts: (a) processed agricultural products, consumption of products, and exports of the products; and (b) employment generation, bonus and dividends to shareholders; and wealth creation. Only then would Africans put a premium on consumption of local products since they are owners of these industries that produce the goods.

In polycentric arrangements, privatization of local industries and enterprises can enable the transitional poor to move out of poverty as it opens opportunities not only to be co-owners of food investments but also be employed in local industries and factories. When local people have access to employment opportunities and receive bonus and dividends from local investments, wealth is invariably created, the people are economically empowered and, in the long run, poverty will be reduced. The overall outcome of all these is food security and poverty reduction (see Akinola, 2008p:191-192).

**African Employment Generation Model (AGEM)**
African Employment Generation Model (AGEM) is conceptualized as the combination of factors of production (land, labour, capital, entrepreneurship and technology) through appropriate institutional mechanisms that synergize the efforts of the key stakeholders (governments, universities, industries and business sectors) in employment generation.

**Table 1: Employment Scenario**

<table>
<thead>
<tr>
<th>Factors of Production/Employment</th>
<th>Locally Sourced</th>
<th>Imported</th>
<th>Mixture of Local and Imported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labour</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Ownership</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>25</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>% Total</strong></td>
<td>25/30 = 83.0%</td>
<td>5/30 = 17.0%</td>
<td></td>
</tr>
</tbody>
</table>
According to this concept as displayed in Table 1, employment could be generated when more than two-thirds (66.67%) of factors of production/employment are locally sourced. In this model, 83.0% of the factors are locally sourced, while 17.0% is a mixture of local and imported factors. This suggests that instead of developing technology for society, technology should be developed in the society in order to address societal needs more effectively. This notion is supported by Feenberg (1999) when he suggests that technology development is a practise of co-creation involving social and material aspects, social and natural sciences, and societal and technological developments. Similarly, Ruivenkamp (2003) emphasized that technology has to be developed with intended users and thereby creating the environment needed for adoption; people wanting technology that are developed together with them.

**Implementation Strategy**

The implementation of food security strategy takes place at two levels: university and local government/community levels. At the university level, the strategy is designed to enable university to gather experience through commercial farm and industrial estate. The strategy spans four stages (see Akinola, 2010i:68-70; 2011a:45-47). Findings would be used to produce training and re-training manuals for workers and also as teaching and research materials for students and faculty.

At the local government/community level, the university could use its experience for the implementation of PPPRS. The university acting as a facilitator should use a local government or a community as a platform to implement the same strategy that it has adopted to initiate community-based food security programmes. Further, the university should facilitate the establishment of partnerships among stakeholders in food security scholars, industrialists, peasant farmers, interest groups (like co-operative societies, private organizations) and individuals. PPPRSwould enable governments and other stakeholders play complementary and symbiotic roles, especially, in setting up processing and other agro-based industries thereby creating job opportunities for the people at the local level in selected communities. Similarly, PPPRS would help in creating opportunities for farmers and other citizens to jointly own agro-based industries through shareholding (polycentric privatization), thus constituting the drivers of economic forces at the various local economic centres in the local government areas. This, invariably, would enable the local government to be financially buoyant and self-reliant. Further, the university should initiate and implement community-based investment projects to generate employment opportunities for citizens in selected communities. The implementation strategy at the local government/community level is highlighted under fifteen stages (see Akinola, 2008p:194-195; 2010i:70-74).

The whole idea is diagrammatically expressed in the model (Fig. 1) showing the relationships between the university/polytechnics and industrialists as the first level of action, while Fig. 2 demonstrates the process of implementing PPPRS for food security as the second level of action at the local government/community level. At the same time, the model illustrates the application of PGPRS in relation to the pursuance of the actualization of five important issues: (1) re-orientation of values; (2) creation of wealth; (3) generating employment; (4) providing affordable food for the poor; and (5) reducing poverty.
Fig. 2: The Process of Polycentric Governance and Poverty Reduction Strategy for Food Security in Africa.
Source: Adapted from Akinola (2008p:196).
Conclusion
This paper concludes that the failure of conventional policies on food security and employment generation in Africa calls for a paradigm shift in food security to a new institutional arrangement whereby the efforts of the stakeholders in food production system are synergized. The paper adopts Polycentric Planning and Poverty Reduction Strategy (PPPRS). PPPRS employs African Food Security Model (AFSM) that focuses on the mechanism to combine factors of production. It is believed that any university that is interested could kick-start the implementation of this innovative idea by applying AFSM. Outside the university, this proposal is designed for the implementation of PPPRS at the local government/community level in Africa. The institutional arrangements proposed for local government/community level, if adopted, would help create opportunities for farmers, local associations, interest groups and other citizens to jointly own agro-based industries through shareholding polycentric privatisation. By networking with stakeholders, agricultural innovations from universities would be developed by industrialists and consequently, popularized by governments among farmers. The adoption of innovations by peasant farmers would help in transforming agricultural resources into semi-finished and/or finished products at farm sites. This would guarantee utilization of local resources, reduce wastages, strengthen economic capacity of rural dwellers and thus, enhance higher productivity in farming and food security. Invariably, this would generate employment for local people, enhance farmers’ economic empowerment, reduce rural-urban drift and increase the living standards of the people. Invariably, this strategy would help in constituting communities as engineers and drivers of economic forces at various local governments in Africa.

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