

## **Intersecting Western and Local Knowledge: Critical Issues for Development Research in Africa**

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### **Abstract**

Knowledge production, sharing and adaptation become beneficial when they enhance sustainable human development. Western and local knowledge are not mutually exclusive. In combination, local and western technologies may work well than what they individually aim to do in specific contexts. This article proposes usage ‘preference theory’ as a basis for recognizing and perpetuating local knowledge in development research. It also identifies the commonalities between Western and indigenous knowledge. Discourse analysis is employed to critically address political, economic, environmental and cultural issues in knowledge production. The paper also suggests a model for the integration of both mainstream science and local knowledge and technologies for enhancing sustainable growth and development in sub-Saharan Africa (SSA).

**Keywords:** *Politics, science, local technologies, agriculture, culture, sub-Saharan Africa.*

### **Introduction**

Over the years, the question of how western scientists and smallholder farmers and artisans can best work together has been a matter of rhetoric. Participatory methodologies, in real terms, have not contributed to a veritable change in the power relations amongst relevant stakeholders. As a result the socio-economic situation in sub-Saharan Africa (SSA) remains worrisome today. The present paper critically addresses political, environmental, cultural and economic issues in knowledge production [section 2] by employing a discourse analysis. While the article proposes usage ‘preference theory’ as a basis for recognizing

and perpetuating local knowledge in development research [section 3], it finds a commonality between mainstream science and indigenous knowledge [section 4]. The paper also suggests a possible framework for the integration of both science and local knowledge for enhancing sustainable growth and development in SSA [section 5].

### **Politicization of Knowledge**

The distinction between the dominant form of knowledge and local knowledge is presented in Milovanovic's work (1997). Local knowledge is perceived as illogical and unsystematic, and suppressed in favor of western knowledge by powerful voices within the knowledge industry. Contrary to the claim of the modernists that knowledge is global, the post-modernists see the same as local, partial and fragmented (Milovanovic, 1997; Foucault, 1973, Foucault 1980).

Knowledge production appears to have been politicized amongst African academics and scientists. Africans trained in the West are often reluctant to project the knowledge that is indigenous to Africa. Amongst them the indoctrination of those who belong to the modernist school of thought support "...positivism, rationalism, the belief in the linear progress and universal truth...and the standardization of knowledge and production" (Brey, 2003). They perceive African knowledge as retrogressive and anti-development.

In research administration, selected powerful groups decide what is appropriate for research and where and when to perform the research. At the international and national policy levels, resource allocation is mostly devoted to studies deemed 'appropriate' as '[r]esearch points where the rich and powerful direct it.' (Chambers,1983). The situation has become so dismal that the Council for the Development of Social Science Research in Africa (CODESRIA), which is the "premier pan-African institution of knowledge production" (CODESRIA, 2009a) now solicits endowment fund from its members in order to ensure intellectual autonomy. The organization observes: "... in the last decade, the research funding environment has become increasingly volatile, with many donors supporting only specific, earmarked projects and programs that coincide with their priorities or the priorities set for them by their governments or founders" (CODESRIA, 2009b). Unfortunately, those who are sympathetic towards the validation of local knowledge are few in number and as such appear not to have strong enough voice to chart a new pathway.

Since research agenda setting depends on personal interest, even the University Research Council (URC), the body in charge of regulating and awarding research grants at the University level, may have compromised objectivity in the selection of priority research. Thus, the political economy of knowledge production in Africa has been lop-sided and replete with misplaced priorities. Whether on-farm agricultural research (OFAR) in the SSA has been successful is a matter for another debate as the African food crisis cannot be explained if progress has been made in current research efforts. It is, therefore, appropriate to stimulate the thinking of African people to enable them to probe the reasons why they continue to face development challenges in the continent.

In this respect the cultural and environmental dimensions of knowledge production is of utmost concern. Research institutions, colleges and universities are like factories where knowledge is produced. It is difficult to imagine a production factory that fails to recognize the need and the peculiarity of its market outlets. Observational evidences have shown that certain technologies imported into the African economies do not work in consonance with Africa's unique bio-physical environment. Interestingly, western technologies without local contents as developed by the western trained scientists, right within Africa appear to have yielded less appreciable results. As a result these western technologies and initiatives have become moribund and or ineffective in certain socio-ecological contexts in the SSA region.

Observational evidences also show that the environment determines the exigencies of a given community of people. Thus there is a direct relationship between the type of innovations generated within a particular locality and the peculiarity and totality of its environment. The environment influences people's way of life i.e. their culture and this in turn influences people's livelihood strategies and other social activities. Thus ecology determines, to a large extent, the kind of knowledge and innovations that are developed in a given context. Even in the developed economies, experiential knowledge shows that inventions are tailored towards specific needs of the society. For example, leaf collection equipment is used to clear the lawns in regions where leaves fall from trees in the autumn season. This type of equipment is not useful elsewhere where such phenomenon is not a common occurrence. In Africa, there have been cases where mold board ploughs which are not suited for tropical soils with deep roots have been imported and even when they are appropriately used, they result in equipment damage and ineffectiveness. Thus

problems always arise where there is a dissonance between the environment and the innovation generated for use within that environment. As observed earlier, this is not an uncommon occurrence in the African context where western technologies are introduced and adopted indiscriminately, leading to various problems and resulting in discontinuance amongst farmers (Kolawole et al., 2003).

The cultural dimension of knowledge has been extensively discussed in the literature (Pickering, 1992). Some authors perceive science as relative to culture or interests. This is closely linked with cultural relativism, which explains 'that societies or cultures are qualitatively different and have their own unique inner logic and that it is therefore scientifically absurd to rank them on a scale' (Eriksen, 1995). In other words, what is considered an acceptable form of knowledge in a particular locality may elsewhere be perceived as unacceptable. Again, the totality of the environment in terms of topography, vegetation, soil type, rainfall pattern, etc. all influence the way of life of the people of a certain locality, including their livelihoods and invariably the kind of knowledge they produce. Disruptions arise in the process where vulnerable and poor people are deprived of their right and access to natural resources.

Historically, in Africa, the colonial masters adopted the expansionist approach which deprived the common people of their rights to land ownership and other production resources. Thus they effectively detached the people from their ancestral and spiritual inheritance. Not only have they taken away the natural resources, they have also taken away the language of the people which is an important aspect of culture and replaced them with other European languages (Wa Thion'go, 2009).

The privileged elite, to whom power was eventually ceded by the colonialists, have continued to follow the Eurocentric patterns. Thus, the African capitalist bourgeoisie and their allies have, through the guise of modernity and modernization, taken land resources that belong to the poor. Forest resources (both flora and fauna), which are preserved through traditional norms and sanctions by grassroots people have been taken over by the State under the pretense of modernization (Scott, 1993) causing the perpetual 'dismembering' of the African people (Wa Thion'go, 2009; Scott, 1993).

The structural lopsidedness and deprivations of rural people have, in most cases, affected their passion and drive for developing their own knowledge infrastructures. Being engulfed in the wave of modernization and modernity, grassroots people have surreptitiously and gradually been forced to play down their local initiatives and knowledge systems. The external pressures notwithstanding, some of the philosophies and local knowledge are still not compromised.

However, it is not enough to merely critique the viewpoints of the modernists for their Eurocentric disposition towards indigenous knowledge, it is desirable to offer useful suggestions on the possible paths to follow for integrating local knowledge into the mainstream science. While some scholars have attempted to do so (von Liebenstein, 2001; Hountondji, 1997), this paper offers a practical step towards achieving the objective.

#### **Usage ‘Preference Theory’ of Local Knowledge**

While the author agrees with the viewpoint that an attempt to design a “generic framework” for the application of specific local knowledge in “multiple contexts” could prove to be a futile effort as suggested by Sillitoe & Marzano, (2009), developing adaptable models which could assist in guiding development initiatives in different socio-cultural contexts, may still be achievable. Although local knowledge is truly autochthonous (Smith, 1999), it is perhaps absurd to think that an effort to develop a guiding tool or a ‘theory’ of indigenous knowledge would make us to “...be in danger of ethnocentric behavior, imposing our own views and ideas on others” (Sillitoe & Marzano, 2009). Entrenching this anti-progress viewpoint would not allow the development and recognition of local knowledge within the mainstream science environment. It is difficult to speculate whether any reasonable progress could be achieved in the current apprehensive environment where the dominant knowledge has continued to ride roughshod over local knowledge, regardless of whether the former is perceived as overly ethnocentric or not.

Although Sillitoe & Marzano (2009) argue that it is doubtful whether we can stop making a distinction between the dominant and repressive forms of knowledge, yet finding points of intersection for particular forms of knowledge and perpetuating the mix within the mainstream will be a good starting point for ensuring the survival and future of indigenous knowledge.

By so doing, unnecessary divisions and unhealthy rivalry could be minimized to a large extent. In this respect, genuine progress could be achieved in fields such as medical sciences, architecture, textiles and agriculture, to mention a few which will be discussed later.

For development experts to appreciate the essence and importance of local knowledge in development initiatives, it is necessary to accept the resolve of grassroots population in perpetuating their knowledge systems and ideals. Thus there should be an all-embracing attempt to establish this concept within the development agenda. The hypothesis that local people would continue to use certain endogenous initiatives and innovations developed by their ancestors over many years of observations and experimentations has always remained valid.

In a series of investigations it has been found that there is a positive and significant relationship between preference for indigenous knowledge and its utilization in solving particular problems within specific local contexts (Kolawole, 2001; Kolawole, 2002; Quadre, 2010). For instance, ten years of continuous research in indigenous knowledge and its utilization in agriculture by grassroots people has shown consistency in the way grassroots people perceive this body of knowledge and their preference for the same wherever and whenever the need arises. In a social survey conducted from 2009-2010 amongst 140 small farmers from South-western Nigeria (Quadre, 2010), preference for the use of local knowledge in integrated soil fertility management (ISFM) was measured through the use of interview schedules by a set of statements placed on a 5-point Likert rating scale of strongly agreed (SA); agreed (A); undecided (U); disagreed (D); and strongly disagreed (SD). The average value of each respondent's preference for the use of local knowledge was calculated and computed as one of the explanatory variables (X's) against which the dependent variable (Y), representing the farmer's perception on ISFM was operationalized through a multiple regression analysis. The results show a strong and positive association ( $t = 9.661$ ) between preference for the use of local knowledge and the farmer's perception about ISFM at  $P \leq 0.01$  level of significance. It was also found that about 81.0 per cent of the farmers had a relatively high preference for the use of local knowledge in soil management.

Burgeoned by modernity and modernization, grassroots people have had to contend with the demands associated with the societal trends and transformation. Given that they cannot totally relinquish their ways of life, socio-political, economic and environmental upheavals induced by modernity have always been a challenge to the people. Thus they see modernization as 'anti-development'. Arising from a number of empirical evidences on the field, grassroots people in southern Nigeria have rhetorically opined that modernization is the spoiler of the universe (Kolawole, 2006). However rural people are not totally against modernity and modernization per se, they believe that the negative effects of technological advancement and industrialization on mankind and the environment far outweigh their advantages. As such, they would rather conform to certain norms and procedures as laid down by their ancestors. In no way would there be a compromise between local priorities and western agricultural technologies even if the latter on the surface, appears to be economically advantageous (Millar, 2007).

Although local people are not unreasonably conservative and not unwilling to change to improved mode of production as they have continued to adopt improved technologies perceived as beneficial to them, research have shown that people would continue to use certain endogenous<sup>1</sup> knowledge infrastructure that they consider relevant to their needs within a particular locale and at a given time frame (Kolawole, 2001). Based on these observations there is the need to develop a 'usage preference theory' of local knowledge.

The ground-breaking work of Hakim (1998) on women's varying choices in their reproduction and production roles in the modern society forms the basis for the development of a preference theory. While Hakim's theory seeks to explain and predict women's choices as to whether and how they intend to engage in productive and reproductive investments as a part of their contributory roles in societal development, the usage 'preference theory' seeks to explain why indigenous people prefer to adhere to their age-long beliefs and knowledge systems. The latter dwells more on the choice and preference for particular knowledge and strategies employed for meeting livelihoods and environmental challenges of the general and larger rural society.

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<sup>1</sup> For the purpose of this discourse, the concepts of endogenous, local or indigenous knowledge are used interchangeably throughout in the write-up to mean the same thing.

Hakim's theory is limiting due to its restrictive scope on gender issues relating to women's choices in production and reproduction alone. The proposition on usage preference states that local people would continue to use certain knowledge systems belonging to them in time and space, which they perceive as beneficial, to achieve their aims as the situation demands within a given social and cultural context, regardless of the state of modernity and modernization. Invariably, exigencies, perception and conviction [on how the society should be ordered and how things should be done], formal training and education, socio-political and economic pressures, and environmental demand are some of the crucial factors influencing the desire to adhere to one's own knowledge (Kolawole, 2002). This of course has particular implications for development. While it is true that indigenous knowledge is "culturally specific" and "geographically local" (Sillitoe & Marzano, 2009), there are variants of such forms of knowledge that have similar features in ecologically similar locales and socio-cultural contexts. An adaptable tool or framework could be applied to address development challenges in such contexts when the need arises. Perhaps, this could be the point of departure from the conventional approach.

The premise on which to engage local knowledge in development research in Africa and elsewhere is to start from a set of tested general assumptions, which this paper seeks to do. On this basis interdisciplinary skills, effective communication and meaningful collaborations between and among stakeholders (Sillitoe & Marzano, 2009; Kolawole, 2010) will be better put to use in development research. Only under this condition adequate answers could be provided for persisting questions such as:

- 1) What would the development agent or agency do in a situation where the clientele system has a different perception or opinion about what the former intends to push?
- 2) How can there be some trade-offs and convergence within the operating space?
- 3) How would power relations be better managed amongst grassroots clientele and development agents/agencies and other stakeholders in order to chart a better pathway for development?



Presently, it appears that the farmers or local people's disaffection and disdain towards western academics, scientists and policy makers abound (Geissler, 2005). It is acknowledged that the overwhelming effect of modernization has resulted in many Africans' obsessions and cravings for western products such as clothes, automobiles, electronic products, etc. But the mismatch of choices between material products originating from the West and those from Africa should not be equated with the preferred choice for testable non-material products of African culture, which the Africans still hold in high esteem. The interest and attention which westerners continue to show for African technologies particularly in textiles, music, architectures, etc. corroborates the uniqueness of Africa's products themselves.

Farmers and local people often view past research endeavors carried out within their domains as non-beneficial to the development of their communities. In some of our field work, local people are quick to exhibit research fatigues. Most of the time, farmers see formal research as an activity whose outputs must and should be confined within the walls of the University or research centers laboratory as real life situations suggest that such endeavors would not work for them. Researchers and policy makers need to seriously reflect on this issue to enable them to work sincerely and genuinely in meeting people's aspirations and needs. Issues of power and control need to be thoroughly addressed as well (Sillitoe & Marzano, 2009).

Recognizing local initiatives, identifying what works, and seeking to work within the framework are essential for making progress (Dunn, 1978). Also approaching development through different pathways in specific contexts cannot be refuted. Thus, the preferences of indigenous people in SSA region, like in any other place, need to be prioritized in the development process.

### **The Commonalities among Western and Local Knowledge**

Defining knowledge is not a straightforward endeavor. Nonetheless, Sumner and Tribe (2008) highlight the key concepts and questions underlining the philosophy of knowledge. These are -

- 1) ontology (which addresses what actually exists and the nature of 'reality')
- 2) epistemology (which is about how to know 'reality')
- 3) theory (focusing on the subject-matter for research - the basic assumptions about the inter-relationships between phenomena)
- 4) methodology (addressing the strategy informing the choice of methods) and methods (the techniques used to elicit and analyze data).

Thus, each domain of knowledge has its own way(s) of knowing – its methodologies; theory and; what constitute knowledge (Scoones & Thompson, 1994). The modernists see knowledge as global and dominant (Milovanovic, 1997). However, the postmodernists views on knowledge are varied and they include 'local'; 'fragmented'; 'partial'; 'contingent and provisional truths'; 'discourse of hysteric and analyst'; 'meta-narratives'; 'heard within repressed voices'; 'article for sale', 'produced in multiple sites'; 'relational and positional'; 'intricately connected and hierarchically arranged with power'; diffuse and heterogeneous, etc. (Olukoshi, 2006; Kerruish, 1991; Sarup, 1989; Dews, 1987; Lyotard, 1984; Geertz, 1983; Foucault, 1980; Foucault, 1973; Pitkin, 1971; Godel, 1962; Sillitoe & Marzano, 2009). Although contested, Agrawal (1995) argues that western and indigenous knowledge are dissimilar on three grounds: a) substantive; b) methodological and epistemological; and c) contextual (Banuri & Apffel-Marglin, 1993; Chambers, 1980; Dei, 1993; Warren, 1991). Clearly, the autochthonous nature of local knowledge perpetuates its popularity worldwide but certainly not its acceptability amongst some sophisticated elite. Clearly it cannot be claimed that local knowledge belongs exclusively to the South as it is pervasive in all grassroots communities of both developed and developing economies. Thus debates on the distinctions between local knowledge and mainstream science have become contentious on issues of production and regulations. Regardless of these views, both western and local forms of knowledge have some commonalities in their production procedure. Although different in terms of regulations and systematization, the two bodies of knowledge are produced

over a given period of time through a process of careful observation, experimentation and validation. Given that grassroots people do not operate within the space of professional regimentation and sanctimony as practiced in the academic world, they observe the natural phenomena around them and by doing so they devise means through trying out available options to overcome their challenges. This is the experimentation phase. It is a process in which farmers, local artisans and philosophers are able to match their efforts with identified goals and objectives. The intention is to close the gaps between an undesirable condition and their expectations to improve the situation. They undergo experimentation process through natural instincts but without any written or purposefully designed framework, which is perceived superior by researchers and academics. Here, there is no need for the use of special equipment, no need for a physical laboratory where chemical reagents are mixed together to arrive at a set of conclusions. All that is needed is to practically engage with the environment using natural resources found within the immediate neighborhood. There is no clear-cut framework for internal regulations of indigenous knowledge production as found in formal knowledge production. Contrary to what is practiced in the academia and research institutions, documentation is not required as, all is relied upon mere memory. Nonetheless faulted by Agrawal (1995), local or indigenous knowledge, unlike western science, is seen as closed, holistic and non-systematic and without a general conceptual framework (Banuri & Apffel-Marglin, 1993; Howes & Chambers, 1980). If the claims are accepted as true, this may partly reveal the procedural weaknesses embedded in indigenous knowledge systems.

However this does not suggest that local knowledge does not have its strong points. The indigenous knowledge system is easily adaptable to local issues and problems and account for one of its greater strengths. In addition, as local resources are utilized in the production and application of indigenous knowledge and technologies, it could enhance sustainable development. Although western knowledge follows rigorous, systematic and formal procedures with attention given to documentation, this still does not minimize the importance of local technologies which are naturally adaptable to specific socio-cultural and ecological milieu. Western knowledge prescriptions may not only be inadaptable in some local contexts, in certain instances they are more expensive to adopt by the poor and vulnerable farmers and other grassroots people. As some western innovations are complex and as such not easily comprehensible to smallholder farmers, they create additional problems.

Local artisans and farmers have thus continued to devise locally adaptable, simple and cost effective ways of meeting specific needs over a considerable period of time.

Nonetheless, the integration of western and local forms of knowledge wherever applicable and practicable appears to be the best option for the enhancement of sustainable development. As observed earlier, local knowledge and western knowledge share common procedural characteristics in observation, experimentation and validation. Enmeshing them to provide solutions to local and contextual problems cannot be disputed. The following section provides an attempt on how this combination may be achieved.

#### **Intersecting Western and Local Knowledge: A Suggested Model**

Advocates seeking the validation of indigenous knowledge systems and technologies are unequivocal about the need to bring the knowledge of local community people within the formal structure of the society and education system (Emeagwali, 2003; von Liebenstein, 2001; Hountondji, 1997). Reprimanding African States for their age long, extroversive [Eurocentric] and frivolous disposition towards outsider or western knowledge and the total dependence of these economies on the same, Hountondji (1997) makes a strong case for the democratization of knowledge as he writes:

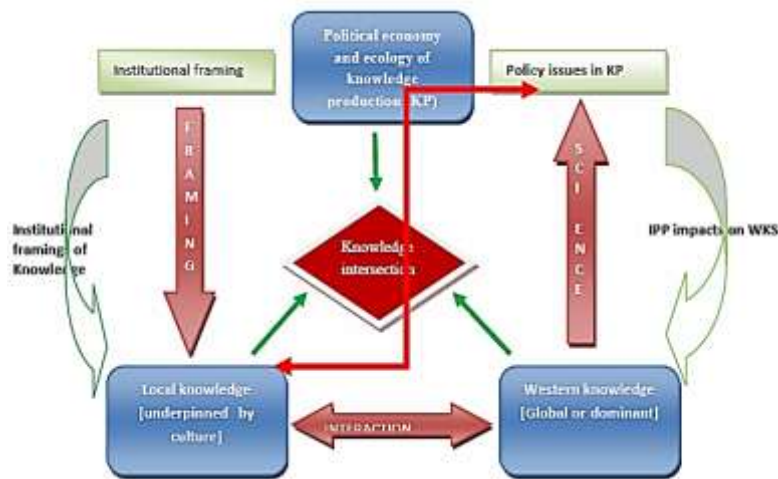
To break that logic at last, to recover individual and collective initiative, to become ourselves again is one of the major tasks prescribed by History. The task, within the specific field of knowledge, amounts to taking an informed enough view of current practices in order to work out other possible modalities of producing knowledge, other possible forms of technological and scientific production relationships, first between the South and the North, but also in the South itself and inside each and every country

The thrust of this paper finds relevance in the viewpoints of Hountondji. The need to develop a model for engaging both western and African indigenous knowledge and technologies (AIKT) in a meaningfully profitable and sustainable manner is thus central to the arguments in this discourse. Since neither local nor western knowledge is mutually exclusive (Chambers, 1983), the primary objective of the paper, is initiating a debate on how to create a workable foundation for the integration of both western and indigenous knowledge. The first step should be to identify the meeting point or overlap between these two bodies of knowledge and to use the commonalities between them to formulate policies and devise strategic procedure for integrating them.

In other words, the entry point will be to address indigenous knowledge and technological development in sectoral policy agenda and implementations. Policy alternatives should incorporate the use of local knowledge and appropriate technologies to enhance growth and development in the SSA.

Although this paper focuses particularly on agriculture, there is a need to consider the adoption of local knowledge in the significant roles of education, technology, health, housing and other relevant sectors. For instance, Colleges and Universities need to incorporate the teaching of relevant indigenous knowledge in their curriculum and wherever possible, this knowledge needs to be taught in the mother tongue to make them effective. Through special lecture series, invitation and other means, proven local philosophers and innovators could provide the University and College students with an opportunity to benefit from their knowledge base. Presently, there are few examples of how some scientists trained in the west have benefitted from the knowledge of local farmers. A group of students in a West African university had embarked on a field project in environmental studies. They were to provide solutions to local farmers on supposedly environmental challenges with which the latter were faced. Interestingly, the students instead came away with sound advice offered to them by their host- the local farmers, on the problems they had earlier encountered in their series of experiments on the college farm (Richards, 1985). Here, the importance of creating an interactive platform between agricultural students and local farmers is manifest. By working in this fashion, local knowledge is legitimized, recognized, preserved and utilized to advance development.

Figure 1 shows how governance, local knowledge and mainstream science can interact to achieve knowledge integration. Institutions, political economy and ecology of knowledge production and policy issues (IPP) would determine how knowledge production is shaped.



**Figure 1: An adapted tripod model showing some interactions between institutional/governance factors, local and western knowledge systems and their overall impact on knowledge production (KP) (Kolawole 2008)**

Political economy and ecology of knowledge production explains the power relations amongst actors, which of course determine the allocation and mobilization of scarce economic resources for enhancing knowledge production. It is also concerned with how the nature of the natural resources available in a given environment and context influence policy decision in the knowledge industry that encompasses the academia, research institutes and related sectors.

Institutional framing is about how institutions concerned with knowledge production [in a particular sector] view both local and western knowledge and how they perceive them. How the institutions perceive the relevance and appropriateness of local knowledge would ultimately affect the policy formulated for advancing knowledge. Policy issues in knowledge production encompass conceptualization, choice and implementation of the policy objectives as they relate to knowledge production - in this case in development research. The crucial role of policy issues in the proposed bid to integrate local knowledge in mainstream science cannot be overemphasized.

Local knowledge is often explained as the repressed form of knowledge- work of the rhizome, enthymemes, minor literatures, etc., which are found where they are developed. Evidently, language, as an aspect of culture, plays a vital role in knowledge development and communication. Therefore, it cannot be divorced from local knowledge itself. Although accepted as being adaptable elsewhere and in other similar contexts, local knowledge is autochthonous. They are found in local communities where people are close to nature and where community members hold their traditions and norms in high esteem. Agrarian communities are rich in this form of knowledge and this buttresses the claim that local people will most likely continue to prefer and use the knowledge that belongs to them in time and space. For example, some farmers in Ghana would prefer to use local knowledge in their farming practices as strictly laid down by their ancestors than to adopt a foreign innovation regardless of the economic gains, which it potentially offers (Millar, 2007).

Western knowledge is construed as a repressive or dominant form of knowledge. Through colonialism, Western knowledge has become pervasive to such extent that some traditional communities are almost overwhelmed by its influence. By virtue of how it is produced and disseminated, it has gained a tremendous advantage over local knowledge over recent years. How they influence policy decisions is presented in Figure 1, showing it has a direct and significant influence on policy-making.

Knowledge intersection proposes practicable integration of both local and western knowledge. Over the years, postmodernists have continued to argue for the invigoration of local knowledge placing it side by side with mainstream science. The debate has taken various forms but the idea of finding a common ground between the two knowledge systems is beginning to gain a new momentum. The two-way possible interaction between them, as shown in the framework, is intended to enhance consensus building in knowledge production. As shown in the model, local knowledge would find its relevance where it has the capacity to influence policy issues, whether directly or indirectly. Southern African countries, particularly South Africa and Botswana are already blazing a trail in this regard.

Rather than taking a subtle lead role, agricultural and related research institutions need to improve on their use of current participatory methodologies by actually involving from the on-set recognizable but not politicized smallholder farmers and local artisans in their strategies and policy

frameworks including research agenda, policy objectives and research designs. Although not straightforward, genuine democratization of knowledge production would in turn enable farmers and other grassroots stakeholders provide enough views on what they consider to be appropriate for them in a local context and rather than 'invent false problems' and craft 'easy' solutions (Olukoshi, 2006).

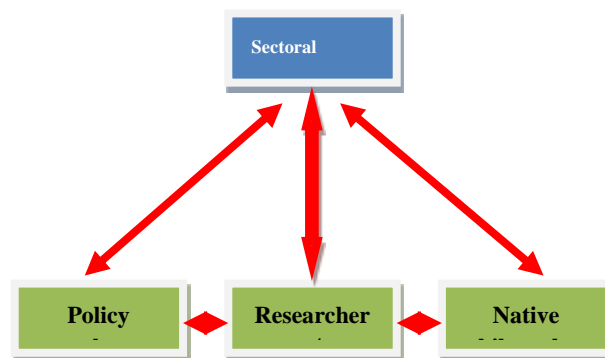
Academics and researchers would do well by allowing research agenda to emanate from discussions and viewpoints generated from the primary clientele before engaging in any development research. For instance, involving farmers in soil fertility management research will start at the same level as the level of farmers' knowledge and soil management procedures. Recognizing how and why farmers use certain local resources for enriching the soil at a given location is a genuine starting point. Also, integrating local textile technologies, for example, into modern innovations in the textile industrial setting could ensure sustainability and economic progress for both small and medium scale businesses in the sector. Involving local artisans and tool fabricators in the design of appropriate, cost-effective, user-friendly and simple farm tools by industrial tool manufacturers will not only give approval to the use of such products, it will also provide clues on ecologically compliant material resources to be incorporated in the process. Certain local people have indigenous knowledge in various areas including iron ore mining as they know the specific materials which are appropriate for specific tools. The near moribund, Kpelle steel making technology in Liberia is a good case study (Thomasson, 1991) He reports that this indigenous technology is capable of producing agricultural implements of far better quality than those being imported. Iron ore available to Kpelle blacksmiths is high in titanium and chromium content, allowing the production of hoes and cutlass blade that have high tensile strength and are resistant to rusting. Instead of encouraging this local industry, Liberia had undermined it through the large-scale importation of hoes of inferior quality.

Typical of most African governments, the above scenario clearly reveals a Eurocentric, weak and extroversive political economy. If it were encouraged by the government, the impact the indigenous steel industry would have made on Liberia's economy, can better be imagined. Unfortunately institutional framings show that African knowledge systems are grossly archaic and anti-development. Thus, institutions vested with the responsibility of discharging development duties would prefer to go the way of the West to solve local



problems. Rather than to look inward and create formidable and uniquely African solution, policy makers, academics and researchers generally subscribe to ‘scientific’ solutions without any critical analysis and evaluation. In spite of all the ‘scientific effort’, African problems have continued to defy solutions.

By and large, the road map as laid down in this paper is that sectoral policy agenda, conceptualization, planning and implementation of development initiatives would require that grassroots societies and individuals are thoroughly and pro-actively involved as shown in Figure 1. As mentioned earlier it is neither straightforward nor simple. Achieving consensus will, therefore, take time and patience. Whether a knowledge alliance will be achieved relies heavily on how institutions frame knowledge production, the political economy, and ecology of knowledge production and how policy-makers perceive both local and western knowledge. By further distilling the framework in Figure 1, distinct stakeholders’ linkages can be established as illustrated in in Figure 2.



**Figure 2: A framework on institutional and grassroots relationship in knowledge production**

As shown in Figure 2, policy makers; researchers and academics and; native philosophers/local farmers/artisans need to work together in an agreeable operational space (Kolawole, 2010) and in conjunction with a consensus institutional or sectoral policy agenda on KP.

The ultimate aim is to make both ‘scientific’ and local knowledge work hand in hand with a view to achieving economic progress and sustainable development. Endogenous initiatives and non-governmental organizations (NGOs) such as the Comprehensive Africa Agricultural Development Program (CAADP); New Partnership for Africa’s Development (NEPAD); Forum for Agricultural Research in Africa (FARA); Alliance for a Green Revolution in Africa (AGRA); etc. have enormous roles to play in this proposition. The Association for the Development of Education in Africa (ADEA), which seeks not only the acquisition of knowledge and skills but an African education that “...induce[s] learners to consider ...cultural diversity of their societies as an asset instead of a problem” will also play an important role on how to “...integrate this diversity into education programs...” (ADEA, 2009).

The African Academy of Sciences (AAS) may do better by shifting focus and redesigning its policy framework as well. The Association of African Universities (AAU) and other allied national bodies should take a leading role in the implementation of a new curriculum that emphasizes the teaching of local knowledge (using indigenous languages where appropriate) in African colleges and universities. This needs to be taken beyond mere rhetoric. It is evident that most economies (particularly in Asia) where the use of mother tongue is used for teaching in schools are far more innovative and inward looking than those that use foreign languages as means of instruction.

### **Conclusions**

In this paper, I have taken a critical look at the politicization of knowledge in the African context and the implications of political economy and ecology on KP. Also, several environmental and cultural dimensions of knowledge production have been highlighted. I have proposed the development of a usage ‘preference theory’ of local knowledge to further reinforce its natural perpetuation. As previously argued, the proposition dwells on the broader choice and preference of rural societies for particular knowledge and strategies, which they readily exercise to achieve their livelihoods and environmental management goals. Beyond the preference theory discussed earlier, which is restrictive because of its limited scope and gender bias for women, the usage preference theory offers an enhanced understanding of people’s disposition and choices on how they intend to determine their own

fate in a technologically-driven global society. The commonalities that exist between both local and western knowledge are identified and thus form the basis for suggesting the intersection of the two bodies of knowledge with a view to putting in place a framework for integrating them

Clearly, there is an important lesson, which Africa must learn from India. Calling for *Swadeshi* to develop human skills and capital, Mahatma Gandhi mobilized Indians to look inward and enhance endogenous handicrafts and by so doing, making local technologies replace the colonizers' imported goods. Elsewhere, Hountondji reinforce this idea by suggesting that there is a need for African states to desist their extroversive tendencies and that Africa would be well off if it re-discovers its local languages and use them 'as vehicles for teaching at the highest level' in order to democratize KP (Hountondji, 1997).

If Africa wants to find its socio-economic and cultural relevance in a globalized world, a radical approach and an entirely new model are needed to enable it to effectively project its own technologies and resources to other economies (Mushita & Thompson, 2008). Aside from a multi-disciplinary approach needed in KP and technological development (Kolawole, 2010), civil society, grassroots organizations and community viewpoints would be paramount in building African knowledge infrastructure for enhancing economic growth and development. More importantly, both defensive and positive protections of grassroots intellectual property rights (IPR) also need proper re-examination (Visser, 2004).

Without doubt, development strategies and policy agenda of knowledge-based African organizations will influence the current thinking of the SSA sub-region. Whereas emphasis needs to be placed on Africa's heritage rather than relying solely on the West, the political economy and ecology of African states would need a thorough overhaul to enable Africa find its relevance in the 21st Century.

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