

CALCULATING THE HIGH VALUE OF INDIGENOUS KNOWLEDGE SYSTEMS AND HARNESSING THAT KNOWLEDGE FOR AGRICULTURAL AND SUSTAINABLE DEVELOPMENT

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Abstract: *This article demonstrates the high value of indigenous knowledge systems for agricultural and sustainable development in Africa. We need to capitalize on what we already know about indigenous technologies as well as compel African educational systems to evolve and find innovative ways of using and possibly, commercialize proven indigenous knowledge practices. The central thesis in this article is that agricultural and sustainable development can each be viewed through the lens of education, which in many ways is related to knowledge systems including indigenous knowledge and Western-based knowledge. These knowledge systems can be used to advance agricultural and sustainable development. Proven indigenous knowledge practices as found in data banks and their economic value in the modern times are lessons to be shared beyond geographical regions. Proponents of indigenous knowledge systems have done exceedingly well in defending the nature and heritage of indigenous knowledge, and should now as a matter of priority, seek ways of commercializing indigenous knowledge practices where possible. The article recommends for African educators, philosophers, scholars, and practitioners to fully experiment with all the knowledge systems in and out of the circles of human imagination.*

Key words: Data Banks, Education, Knowledge, Philosophy, Sustainable Development

Introduction

Indigenous Knowledge Systems (IKS) constitute a liberating type and form of knowledge of the world's rural poor with their influence extending outside geographical boundaries. The existence and use of IKS is sometimes incorrectly interpreted to mean competition with formal-Western based knowledge systems. Studies suggest that scholars and practitioners agree in principle that knowledge plays a central role in the development of any society (Agrawal, 1995; Juma, 2016; Kuan-Hsing and Yoshihiko, 2016; University of KwaZulu-Natal, 2012; Zvavanyange, 2016). The objective of this article is to outline the high value of IKS and in what ways these knowledge systems can be harnessed for agricultural and sustainable development. Africa is used as a reference in this article. In addition, this article seeks to address the challenges and opportunities for IKS in the education system; safeguarding IKS; and the importance of developing IKS data banks. The central thesis in this article is that agricultural and sustainable development can each be viewed through the lens of education, which in many ways is related to knowledge systems including IKS and Western-based knowledge. These knowledge systems can be used to advance agricultural and sustainable development.

ANALYSIS

African Agriculture and Sustainable Development

General observations in African agriculture and sustainable development are as detailed below.

- The idea of “Africa’s transformation” is high on the global development agenda, in terms of economic, structural, agricultural, social, and political dimensions.
- Alert Africans possess the will and capacity to deal with multiple challenges including those associated with food and agriculture through sustainable development¹.
- Policy and decision makers, researchers and development practitioners are under obligation to set research and development priorities which are “just”, “socially inclusive”, and “sustainable” in pursuit of the new Sustainable Development Goals². “Justice”, “social inclusive”, and “sustainability”, are tenets which appear to be compatible with IKS.
- There is an increase and intentional interest in number of individuals, people, groups, and communities working to make the world a better place that they saw when they first arrived via rhetoric, dialogue, thought leadership, and targeted actions.
- Developed countries and economies described as “innovation-based”, “knowledge-based”, “science and technology-based”, are increasingly being driven by research and evidence-based knowledge.

Defining Indigenous Knowledge and Indigenous Knowledge Systems

Warren (1991) states that indigenous knowledge (IK) is the local knowledge and knowledge that is unique to a given culture or society. IK contrasts with the international knowledge system generated by universities, research institutions and private firms. It is the basis for local-level decision making in agriculture, health care, food preparation, education, natural-resource management, and a host of other activities in rural communities (Warren, 1991). IK is the “social capital” of the poor (Senanayake, 2006). Nakashima (2010) opines that IKS comprises the understandings, skills and philosophies that span the interface between ecological and social systems, and intertwine nature and culture. Indigenous knowledge therefore, is a window to intangible heritage as it is handed over orally from generation to generation. It provides ‘other ways of knowing’ as opposed to western-based formal knowledge systems.

The nature of IK can be summarised as³:

- Locally bound, indigenous to a specific area.
- Culture-and context-specific.
- Non-formal knowledge.
- Orally transmitted, and generally not documented.
- Dynamic and adaptive.
- Holistic in nature.
- Closely related to survival for many people worldwide.

While IKS is part of the strategy to agriculture and sustainable development, not every IKS practice is compatible with some of the tenets found in capitalist agriculture. And even, where IKS does provide a clear strategy, there might still be challenges related to fully harnessing the expertise and wisdom of the holders of IK. The aspirations of

¹ <http://www.un-documents.net/wced-ocf.htm>

² <https://sustainabledevelopment.un.org/?menu=1300>

³ UNESCO, (2015), “Best Practices on Indigenous Knowledge”, Retrieved on October 15, 2016 on <http://www.unesco.org/most/bpindi.htm>

indigenous people should be fully accommodated in all strategies to do with agricultural and sustainable development (International Fund for Agricultural Development, 2003).

IKS and African Educational Systems

Colonization, including its educational systems disregarded IKS that were, and are still important in poor peoples' lives (Chinsamy, 2005). Chinsamy (2005) observes that there was little consideration of cultural beliefs as a result of colonization. The burden is even greater in modern times given the profound changes such as urbanization, diseases outbreaks, increased pressure on natural resources, population growth, economic crisis, increasing food production in the face of climate change, industrialization which threatens biodiversity, and a rising youth population, some of whom may not fully appreciate the importance of IKS in solving the world's problems. There is also an imperative to innovate in IKS to foster its relevance in African educational systems. African policy and decision makers need to seriously consider the utility of knowledge in their nations for countries that disregard the evident and apparent "exponential increase in knowledge" with each generation are bound to trail in human civilization.

The traditional educational arrangements position philosophy separately from other areas of study yet philosophy underpin what students are exposed to in teaching and learning environments (Zvavanyange, 2016). Nsamenang (2011) argues that every human society has educated its offspring within a particular philosophic vision of the child and his or her development and the future toward which that child should mature. The study of indigenous philosophy provides a key to decolonizing African educational systems, making ways for an appreciation of how past civilizations lived in harmony with nature and the environment. "Innovation universities" as argued by Juma (2016), would combine research, teaching, community service and commercialization in their missions and operations. Juma (2016) calls for the need for strategic linkages in many diverse sectors as can be found on the African continent as the precursor to economic transformation. Such innovation universities could also explore ways of commercializing proven indigenous practices and technologies.

Challenges and Opportunities for IKS in the Education System

Overhauling African educational institutions to include IKS will require a step-by-step approach and an awareness of the different conditions as found in the 54 African countries. The historical background of Africa partly gave rise to the educational systems witnessed today. The general aim of African traditional education is based on the social, cultural and economic features shared by the various communities found in Africa (Baguma and Aheisibwe, 2011). The main aim of education was oriented towards survival due to the tough natural environment. Baguma and Aheisibwe (2011) write that every skill, knowledge or attitude was either for protection, and acquisition of food or shelter and ensuring successful reproduction. Other aims were to create unity and consensus in society, to perpetuate the cultural heritage of the ethnic community and preserve its boundaries, to inculcate feelings of group supremacy and communal living and to prepare the young for adult roles and status (Baguma and Aheisibwe, 2011). According to the University of KwaZulu-Natal (2012), the Southern Africa Regional Colloquium on Indigenous Knowledge Systems addresses methodologies and epistemologies in IKS in teaching, research and community engagement. The aim is to make higher education institutions more relevant to the socio-economic development challenges on the continent (University of KwaZulu-Natal, 2012).

Safeguarding IKS

International action at many levels is required to address the concerns, needs and aspirations of indigenous people all over the world (Nakashima, 2010). A study by Kuan-Hsing and Yoshihiko (2016) observes that reputable African scholars strongly opposed the domination of British, French and American systems in social sciences especially during the decolonization period of the 1950's to 1970's. African scholars were trying to

think autonomously concerning their development as well as establish their own perspective. This opposition is observable in present day among critical African scholars.

Unlike other knowledge systems such as Western-based knowledge which tends to be highly specialized, IKS have wide applications in agriculture, environment, health, education and conservation. Noting the interaction of indigenous and development, The World Bank Group⁴ writes that IK is relevant on three levels to the development process:

- IKS is important for the local community in which the bearers of such knowledge live and produce.
- Development agents (community based organisations, non-governmental organisations, donor, local leaders, and private sector initiatives) need to recognize, value, and appreciate IK in their interaction with the local communities. Before incorporating it in their approaches, they need to understand it – and critically validate it against the usefulness for their intended objectives.
- IK forms part of the global knowledge. In this context, it has a value and relevance in itself. IK can be preserved, transferred, or adopted and adapted elsewhere.

The Dar Es Salaam Declaration on the Role of Indigenous Knowledge Systems for Sustainable Development in Southern African Development Community (SADC) countries⁵ brought to the fore three considerations concerning IKS and sustainable development:

- IKS has many dimensions which need to be recognised and fostered within SADC countries.
- Institutions and partners working on IKS issues should communicate better among themselves.
- There is scope for new ideas concerning IKS and sustainable development in SADC countries and beyond.

The Importance of Developing IKS Data Banks

Agrawal (1995) and Agrawal (2002) explore issues regarding indigenous knowledge, development, environmental conservation, and the importance of developing IKS databanks vis-à-vis Western-based knowledge. Agrawal (2002) makes the case to continuously find strategies to protect IKS against all sorts of attacks. IKS databases serve the following purposes: they are pieces of technical information; contain detailed studies of particular ways of addressing a problem; are a catalogue of “best practices”. Agrawal (2002) continues that the objectives of the IKS data base are: they are intended to safeguard IKS in the face of myriad pressures that are undermining the conditions under which indigenous people and knowledge thrive; that they aim to collect and analyse available information, and intensify specific features that can be generalized and applied more widely in the service of more effective development and environmental conservation, and that databases demonstrate the relevance of indigenous knowledge to a wider audience.

Information requested for each IKS to be included in the database includes the following:

⁴ The World Bank Group, “What is Indigenous Knowledge?” Retrieved on October 15, 2016 on <http://www.worldbank.org/afr/ik/basic.htm>

⁵ Dar Es Salaam Declaration on the Role of Indigenous Knowledge Systems for Sustainable Development in Southern African Development Community (SADC) Countries – An Output of the Workshop on Indigenous Knowledge Systems for Sustainable Development in SADC Countries, 15 – 18 March 2004, Court Yard Hotel, Dar Es Salaam.

- Administration data (e.g. by whom? In which sector? What technology? What is the assigned Code Number?)
- Geographical Location (i.e. Where is the practice is applied?)
- Introduction to the Best Practice (description of the main features of the practice and in what ways it is important for the local community?)
- Justification (e.g. why should development organizations learn more about the practice?)
- Achievement and results (e.g. why might it be beneficial to other communities?)

The idea of a Best Practices Database⁶ is premised on the observation that carefully documented case histories can provide excellent guidelines for policy making and planning of novel projects. A database on Best Practices presents and promotes creative, successful and sustainable ideas and innovations to issues that communities face. As a result, the solutions that constitute the Best Practices database can inform research, policy and decision making.

Conclusion

This article has shown that IKS advances sustainable and agricultural development. We need to capitalize on what we already know about indigenous technologies found in the world. It will prove crucial in this challenge to acknowledge the indigenous people and their right to have a voice in sustainable and agricultural development. African educational systems should evolve to find innovative ways of using and possibly, commercializing proven IK practices. Educational and knowledge systems are not immutable and can be changed as sufficient and credible evidence stands is unearthed through research and dialogue. The public should be made aware of IKS databases in existence and the importance of their contribution to such. Perhaps, the greatest challenge in calculating the high value of IKS and harnessing that value for agricultural and sustainable development is how to adapt proven IK practices and their economic value in the modern times. The proven IK practices could be shared across geographical regions for inspiration, motivation, and instruction to communities interested in improving their way of life. Proponents of IKS have done exceedingly well in defending the nature and heritage of IK, and should now as a matter of priority, seek ways of commercializing proven IK practices and technologies where possible.

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