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Representation of Indigenous Agriculture Knowledge and Practices in the Zimbabwe Secondary School Agriculture Curriculum: Prospects and Opportunities for Inclusion

Constantino Pedzisai

Chinhoyi University of Technology, Centre for indigenous knowledge and Living Heritage, Zimbabwe.

ABSTRACT: This paper discusses representation of Indigenous agriculture knowledge and practices (IAKP) in the Zimbabwe secondary school agriculture curriculum with reference to possibilities and opportunities for inclusion. A qualitative multiple case study was employed to analyse components of curriculum and community IAKP, and a curriculum gap was found. The research suggests ways in which effective IAKP inclusion can be approached, the benefits of integration, and some of the challenges for schools. Using a decolonial theory framework, this study consisted of interviews with teachers, lecturers, extension officers and farmers in the area, as well as document analysis and on-the-spot observations. Findings show the curriculum was deficient of IAKP because of knowledge hegemony by the West. In order to decolonise the curriculum, the inclusion of IAKP aspects is of paramount importance to bringing the curriculum into context. Participatory Curriculum Development model is proposed in which stakeholders are involved in the curriculum designing. Recommendations include revision of agricultural policy and further research on decolonising curriculums and utilisation of indigenous farmers in education. Educational support materials on IAKP are required to perform the effective integration in the classroom. The following technologies were highlighted in the study: Leveraging indigenous knowledge holders and practices to enrich agriculture education for sustainable and contextually relevant approaches. By bridging curriculum gaps and promoting growth inclusiveness, the curriculum for agriculture in Zimbabwe can improve agriculture learning for local communities and uphold people's local heritage.

KEYWORDS: Indigenous Agriculture Knowledge and Practices Systems, Decolonisation, Curriculum Development, Participatory Curriculum, Development Model, Indigenous Knowledge, Agriculture Curriculum.

1. INTRODUCTION AND CONTEXT OF THE STUDY

1.1 Introduction

Like many of the post-colonial African countries, Zimbabwe is still struggling to overcome the effects of colonialism in its educational system, particularly in regards to agriculture. Indigenous knowledge and practices, which comprise traditional practices, beliefs and innovations of local communities, have in many cases been marginalised in favour of western scientific approaches (Mapolelo, 2019; Pedzisai, 2020). Agriculture is an important aspect of the economy and culture of Zimbabwe, and as such, it is one of the areas in which incorporating local knowledge could make the curriculum more relevant and sustainable (Chiwanga, 2020).

Indigenous Knowledge Systems (IKS) have a large scope of knowledge and skills that are built outside of the formal education framework and help communities survive in their specific environments. This includes traditional farming methods, crop choice, climate forecasting and natural resource management (Mabogo, 2018). By using IKS within the agriculture curriculum, Zimbabwe will be able to small-scale sustainably relevant agricultural practices.

The marginalisation of IKS have resulted in the absence of local knowledge and perspectives in the curriculum. This has caused a disconnect between the education system and the needs of the local communities. Decolonisation of the curriculum through the incorporation of IKS can go a long way to mitigate the problem and foster epistemic justice (Ndlovu-Gatsheni, 2018).

Some benefits realised by integrating IKS into agriculture curriculum are better sustainability, as the concept of IKS usually promote to be in harmony with the environment and sustainable use of natural resources (Mabogo, 2018; Pedzisai, 2013, 2020). IKS are also contextually relevant and is able to address specific challenges faced by the local communities (Chiwanga, 2020). In addition, by employing traditional farming techniques and crop selection, it is possible to enhance food security and resilience to climate change (Mapolelo, 2019, Pedzisai, 2020).

However, there are also challenges to integrating IKS such as lack of documentation as IKS have often transmitted orally making it vulnerable to loss (Mabogo, 2018). Also, teachers may not be trained and provided with the necessary resources to successfully

implement IKS (Mapolelo, 2019). Furthermore, the current curriculum can be rigid and not flexible to change (Ndlovu - Gatsheni, 2018).

To overcome these challenges, Zimbabwe can consider some of the following strategies: Participatory curriculum development: Engaging local communities and stakeholders in the process of curriculum development can help to ensure that the curriculum is relevant and responsive to the needs and aspirations of the relevant communities (Chiwanga, 2020). Giving the teachers the training and resources to integrate IKS are also important (Mapolelo, 2019). Policies revision in support of integrating IKS into the curriculum can also be helpful (Ndlovu-Gatsheni, 2018).

2. STATEMENT OF THE PROBLEM

The agriculture curriculum in the secondary schools of Zimbabwe is dominated by the Western science approaches which marginalise the Indigenous agriculture knowledge and practices (IAKP) that are important for sustainable agriculture and resilience of the communities (Mapolelo, 2019). This imbalance is one of the reasons for the disconnection between the formal education and the knowledge that local communities know in practice and contextually, which minimises the effectiveness of the curriculum to respond to the agricultural challenges of the local population.

The marginalisation of IAKP in the curriculum has some implications. There is the possibility that the curriculum may not be able to address specific local challenges and contexts and it may, therefore, not be relevant. Additionally, IAKP is in danger of being lost as it is not officially recognised and documented. Neglecting IAKP may also make it impossible to practice agricultural activities sustainably and in accordance with this ecosystem, and this will reduce sustainability.

There is need to incorporate IAKP in agriculture subject curriculum to make it more contextual and to encourage sustainable farming and empower local communities (Chiwanga, 2020). By responding to this gap, the role of education can become more adaptive to local needs, i.e. it can foster development to be grounded in indigenous knowledge and practices.

3. RESEARCH QUESTIONS

This study aimed to analyse the representation of Indigenous agriculture knowledge and practices (IAKP) in the Zimbabwe secondary school agriculture curriculum, exploring prospects for their inclusion. The research addressed the following questions:

- How does the current agriculture curriculum incorporate IAKP?
- What IAKP practices exist in communities but are missing from the curriculum?
- What are the benefits and challenges of integrating IAKP into the agriculture curriculum?
- How can IAKP be effectively included in curriculum development?

By examining these questions, the study sought to contribute to decolonising Zimbabwe's agriculture curriculum, enhancing its relevance to local contexts, and promoting sustainable agricultural practices grounded in indigenous knowledge.

4. THEORETICAL FRAMEWORK

The decolonial theory is used to inform the research and criticise the hegemony of Western epistemologies in education and promotes the acceptance and legitimisation of indigenous knowing (Ndlovu-Gatsheni, 2018). Decolonisation here requires a reviewing of the curriculum which in turn implies the inclusion of cultural, historical and practical realities of the Zimbabwean communities; it is a bid to make agriculture education more inclusive and place it within a contextual setting.

The decolonial theory emphasises the need to challenge and disrupt colonial buildings, which have given privileges to the West epistemologies at the cost of the knowledge system of the natives (Mignolo, 2011). Within the Zimbabwean context, this entails the demand to realise the historical marginalisation of indigenous knowledge and in turn, seek to integrate it into the formal educational arena. This kind of integration provides the most viable way forward in a curriculum that is contextually based, responsive and empowering and, in this respect, the sustainable development and community empowerment.

The decolonial paradigm acknowledges that knowledge is neither objective nor universal, but instead it is a product of cultural, social, and historical accidents (Chiwanga, 2020). In agriculture education, such an observation would translate into the appreciation of traditional practices and knowledge systems that have seen community successful in various ecological regions.

With an inclusion of native knowledge, the curriculum will be well placed to develop a greater appreciation of agriculture allowing a smooth shifting point between local and international views. Decolonisation also involves restructuring of relationships of power, which recognises the attention of local community in mapping their developmental paths (Mapolelo, 2019). This in turn makes the active involvement of such communities in the curriculum development and decision-making process to be a must to make sure that the teaching is responsive to their needs and requirements.

The decolonial theory has some far-reaching implications on agriculture education in Zimbabwe. The focus on indigenous knowledge and views makes the curriculum both contextual and, at the same time, injects indigenous insights into the development of viable agricultural methods and enhancing community resilience (Mabogo, 2018). This way, local actors are re-empowered and the indigenous heritage is reenergised and a sense of ownership and agency towards agricultural development is created. In this way, the decolonial model is an important analytical tool, with the help of which it is possible to understand why the reform of the

Zimbabwean agriculture education is a requisite. Focusing indigenous knowledge and views in the educational process, it sheds some light on the society and labour. By updating the local language and knowledge, introducing indigenous values, lifestyles, and epistemologies, encouraging indigenous learning contexts/models, the framework enhances an intersecting, culturally based agriculture education.

5. LITERATURE REVIEW

IAKP in Zimbabwe are based on millennia-old traditions which place strong emphasis on ecological harmony, and on best utilisation of local resources, and are governed by community stewardship (Mabogo, 2018). These practices include crop rotation, preservation of seed seeds, organic farming and livestock management practices appropriate to local flora making a difference in food security and community resilience.

The lasting value of IAKP is that it is contextual and intrinsically sustainable. Traditional agrarian methods focus on soil conservation, biodiversity conservation and the use of local resources; they agree well with the theory of sustainable agriculture today (Chiwanga, 2020). Moreover, IAKP combines local knowledge about climatic patterns, pest dynamics and crop choice and is therefore an invaluable storehouse of information for the specific agricultural problems in Zimbabwe.

5.1 Curriculum Development and Decolonisation Theories

Decolonisation theories provide a critical frame through which the imperative of the transformation of agriculture education in Zimbabwe could be understood. These set out to contest the dominance of Western epistemologies in the process of schooling by arguing for the recognition and incorporation of indigenous knowledges (Ndlovu-Gatsheni, 2018; wa Thiong'o, 1986). In the thematic context of agriculture education, decolonisation implies a fundamental shift in the value and production of knowledge, which will require a curricular revision that reflects the cultural, historical and practical realities of communities in Zimbabwe as well as a shift that suggests moving toward a more inclusive view of agronomy that is contextually grounded.

Decolonial theory argues that knowledge is not neutral and universal, but is shaped by cultural, social and historical circumstances (Mignolo, 2011; Quijano, 2000). Applied to the situation in Zimbabwe, agriculture education must place a premium on traditional practices and engage local communities in the process of developing the curriculum. Doing so recognises the importance of indigenous knowledge in facing local agrosystems and ameliorating efforts towards sustainable development and helps to promote a sense of ownership and agency of the community in bringing about agricultural development.

Decolonial theory has profound implications for the formation of curriculum. It promotes that change should be a participatory process, involving stakeholders such as elderly, farmers and local leaders in the decision-making process (Chiwanga, 2020; Mapolelo, 2019). This inclusive approach means that the curriculum incorporates valuable indigenous knowledge and focuses on specific agricultural issues whilst at the same time requiring a critical examination of ingrained power relations within education in a way that acknowledges local communities' agency in self-determination (Fanon, 1963; Memmi, 1965).

However, by adopting the theory of decolonization, agriculture education in Zimbabwe can move toward an equal mixture between the indigenous and the Western in a bid to value indigenous knowledge systems. Such convergence results in an improvement of the educational relevance and efficacy towards sustainable agricultural practices and community empowerment.

The decolonial is a critical framework that allows agriculture education to be reconfigured. How could this approach inform approaches to the embedding of IAKP in the Zimbabwean curriculum?

5.2 Previous Studies on IAKP Integration in Education

Previous research highlights the advantages and challenges relevant to the intruding of IAKP to formal education. The empirical works conducted within the ideology of South Africa and other African cultures demonstrate that the application of indigenous knowledge in the curriculum enhances curricular relevance, sustainability, and empowers the indigenous communities (Chiwanga, 2020; Mabogo, 2018; Nkambule, 2017). For example, incorporating traditional farming practices into the pedagogical content of agriculture helps to deepen student understanding around context specific problems and possible solutions.

Research from Kenya and Tanzania shows that adopting traditional knowledge and modern-day agronomic practices amounts to an increase in crop yield and resilience against climate change (Kisanga, 2016; Ochieng, 2018). Likewise, studies begging in Ghana are revealed the inclusion of local knowledge inside the curricula of agriculture brings to effective pest management and soil conservation (Amanor, 2019).

However, there are major challenges in integrating IAKP such as the lack of documentation of indigenous knowledge, the low capacity of teachers to teach IAKP, and the reduction of rigidity in a teaching curriculum (Mapolelo 2019; Ndlovu 2015). Addressing these barriers requires the positions of IAKP across the types of activities to be collectively determined, teacher training, and policy changes to facilitate IAKP integration.

Within Zimbabwe, the scholarship has reinforced the key idea that the involvement of local communities in the development of curricula increases the pertinence and efficacy of agriculture education (Chiwanga, 2020; Mutambara, 2017). Such inclusive

approaches ensure that curricula will remain sensitive to the local concerns and critical indigenous knowledge will not be overlooked.

Scholarly research has highlighted the important role of elders and traditional leaders in the transfer of indigenous knowledge (Munyoro, 2018; Sibanda, 2016). Involving such stakeholders in the formulation of the curriculum ensures proper representation and valuation of IAKP.

5.3 Implications for Agriculture education

There are numerous implications of integrating IAKP into the agriculture pedagogy of Zimbabwe. First and foremost, it promotes sustainable praxis through sensitising the learners towards environmental interdependencies, enhances food security, and empowers the local communities (Mabogo, 2018). Furthermore, being recognised as the IAKP at the same time preserves the indigenous heritage and supports the feelings of ownership in members of the community who form the active part in the agricultural development occurrence. A set of plans is inevitable to realise these dividends; these include participatory curriculum design, strong faculty development and policy changes that comprehensively facilitate knowledge integration. There is a need to include the stakeholders of the community in the construction of the curriculum using participatory methodologies to ensure that IAKP is well represented and then made relevant to the issues that the population is face to face with (Chiwanga, B020). Sufficient equipping of training and instruction materials to teachers is also important because it helps facilitate the epistemological gaps between indigenous and Western knowledge systems (Mapolelo, 2019). Additionally, policy changes, which put forward the idea of IAKP integration, paves the way to the creation of the enabling environment in the future, where the indigenous knowledge absorbed into the curriculum structures, will play a role in making the education system more inclusive and contextually sensitive. In turn, the concept of IAKP, built into the system of agriculture education, increases the connection with the local settings and promotes sustainable development.

6. METHODS

The research design used was a qualitative multiple case study to question the incorporation of IAKP in the agriculture education in Zimbabwe. Such a methodological approach provided a detailed examination of various cases, which provided valuable information about the intricacies in IAKP incorporation. The fieldwork was carried out in two secondary schools that were chosen because of their divergent approaches to the IAKP integration. The respondents included school educators, learners, the elderly in the community, and agriculture extension workers. Purposive sampling was used to find people who had relevant experience and knowledge on IAKP and agriculture education. Information had been gathered through the semi-structured interviews, classroom and community observations, and analysis of documentary. The interviews resulted in the respondents providing their views on IAKP, curricular growth, and the issues related to it. The importance was made on classroom and community practices that involved IAKP. The results were contextualised through a background analysis of the curriculum documents, policy statements and teaching materials at the context of agriculture education. Thematic analysis demonstrated patterns and trends on IAKP integration, its challenges and opportunities. This method of analysis enabled a sensitive explanation of the problems and perceptions, which became apparent throughout the cases, which enhanced the literature about developing effective methods of applying indigenous knowledge to Zimbabwean agriculture education.

7. FINDINGS

The study revealed a wide gap in the coverage of IAKP in the secondary school agriculture curriculum in Zimbabwe. The curriculum that is practiced is deeply biased towards Western scientific paradigm hence limiting access to indigenous knowledge and practice. This gap creates a disorientation between knowledge gained in schools and empirically based local practices that are held by local communities.

7.1 Gap in the Curriculum in the Indigenous Agriculture Knowledge and Practices Representation.

The secondary agriculture curricula mostly follow the Western scientific principles, and the accent on advanced technological methodology and the modern techniques is high. This kind of orientation overshadows indigenous knowledge and practices, which are central to sustainable agriculture on local levels (Chikowo, 2018; Pedzisai, 2020; Mapolelo, 2019). To be more precise, the curriculum does not present topics like traditional types of crops, the techniques of local soil-management, and methods of pest-control, which makes the barriers in terms of understanding of student of contextually specific issues and solutions. According to both teachers and students, the curriculum fails to capture realities and traditions of agriculture in the area (Chiwanga, 2020; Mutambara, 2017). Even though some teachers strive to introduce local examples, they are not systemised and are not institutionalised into the curriculum.

7.2 Benefits of implementing the IAKP.

The use of Indigenous and Afro-centric Knowledge Systems (IAKS) in the curriculum of educational establishments yields a range of results that go well beyond the four classroom walls. First of all, it supports sustainable farming and environmental management by relying on the use of practices which proved resilient over centuries in the local ecosystem. Examples of traditional crop varieties include the selection of varieties with properties like drought resistant, pest resistant, nutritional value among many others reducing the use of synthetic fertilisers and pesticides. Instilling the process of choosing and growing such varieties, educational institutions help to preserve the biodiversity and show practical, low-input farming practices that further can be assumed by the neighbors (Mabogo, 2018; Motsara, 2016).

Second, IAKS increases food security. Special consideration is given to the native paradigms of livestock management, seed conservation and agro-forestry whereby these systems are specifically aimed at ensuring that there is maximization of yield even during climatic stress conditions. As the learners interact with these methodologies they gain skills that are applicable directly in the production of food in the household, thus enhancing the resilience of the household and minimising reliance on food aid. In addition, the issue of species that have to be changed locally reduces the susceptibility to monocultures and interruptions in world supply chains, thus creating a more secure food base of vulnerable populations (Nyamapfene, 2015).

Third, cultural heritage and sense of community is being strengthened by the adoption of IAKS. Passing of information on the traditional ritualistic practices of agriculture and naming of plant species in local languages and storytelling about land utilisation creates a feeling of pride and continuation in the youth. This cultural anchoring does not only conserve the intangible heritage, but it also leads to the transfer of intergenerational knowledge, as the treasured ecological pieces of information do not get lost in the dreams of modernisation. This means that schools have become centers of community discussion that enable the elders to share knowledge and students to deliberate on their role as custodians of the land and the culture.

Lastly, integration of environmentally-friendly initiatives through IAKS reduces the reliance on synthetic chemicals, which have extensive existing negative impacts on the health of soils, water, and humans. Via the foregrounding of organic composting, control of pests through natural methods, and crop rotation, the curricula coincide with the sustainability goals in the whole world and work towards environmental cleansing. Together, all of these advantages demonstrate that the combination of IAKS is a synergistic one: the development of environmentally responsible agriculture, the enhancement of food security, the restoration of cultural identity, and the evolution of chemical-free and health-friendly agriculture. When put in place in the educational institutions, these principles result in the creation of a generation that will be capable of tackling the current ecological issues without dismissing the ancestral knowledge.

7.3 Challenges and Opportunities.

However, the introduction of IAKP has challenges, such as the oral tradition of transmission of IAKS, its perceived inferiority to the Western practice, a lack of documentation and research, and the associated requirement of training of teachers and curriculum redefinition (Pedzisai, 2020). Nevertheless, there is a chance to combine IAKS with contemporary practices in a manner that can help build the strength and innovation among indigenous communities (Risiro et al., 2024). The solution to these difficulties is to embrace a participatory method when developing the curriculum wherein the communities and other stakeholders participate in preparing the agriculture curriculum (Pedzisai, 2020). This strategy can lead to a more comprehensive and culturally competent curriculum, which would eventually result in sustainable agriculture and heritage conservation.

Community members and elders have varied range of indigenous knowledge on agricultural production, which includes soil conservation, water management, choice of crop, and pest management. These are gender-neutral practices that are passed between generations, and adjusted to the local ecological conditions. As an example, the communities use traditional agricultural practices like mulching and intercropping to improve soils fertility and moisture content, thus making agricultural production sustainable (Mabogo, 2018; Motsara, 2016; Nyamapfene, 2015). IAKS also include the understanding of local crop varieties which are drought and pest-resistant, as well as the conventional livestock management techniques based on current local circumstances. By pointing out the need to prevent loss and decay of this knowledge by young generations of the community members, community members emphasize its applicability to both food security and environmental sustainability.

Traditional pest control methods such as use of natural plant materials such as ash and hot pepper mixed with ash, are good alternatives to chemical agro-synthetics (Akullo et al., 2007; Fenta, 2009; Kiplang'at and Rotich, 2008). Soil conservation practices such as mulching, intercropping and shifting cultivation create favourable condition for the soil, water and nutrient dynamics, which favours sustainability (Tikai & Kama, 2004; Handayani & Prowito, 2010). Water management techniques, such as contour ridges and earth dams, are used to solve the water shortage problem in semi-arid areas. Crop selection strategies include selecting drought resistant crops to insure food production.

Preserving IAKP is of utmost importance for a number of reasons right at the top being the promotion of eco-friendly agricultural practices including those that minimise the need for synthetic chemicals and minimum levels of environmental pollution leading to environmental sustainability, these systems also ensure traditional crop varieties and livestock management practices that will enhance survivability of these systems against climate change and pest pressures that will be crucial towards achieving food security

and lastly, it provides continuity for community identity and traditional knowledge systems that will ensure cultural heritage is preserved as well (Mugwisi, 2020; Pedzisai, 201 By preserving IAKP, communities can use their traditional knowledge to focus on solving modern agricultural challenges to create a more sustainable and resilient agricultural sector.

7.4 Perspectives on IAKP Inclusion from Stakeholders

Stakeholders, such as teachers, community elders, agriculture extension officers and teachers have shown high level support to the adoption of the IAKP into the agriculture curriculum in Zimbabwe. The incorporation of IAKP in the Zimbabwe agriculture curriculum is being promoted as necessary, considering the role it plays in sustainable agriculture, food security and preservation of cultural heritage (Sibanda, 2016; Munyoro, 2018; Ochieng, 2018). This consensus highlights the possibility of integrating IAKP into formal agriculture education and highlights the relevance and significance of the IAKP in addressing local agricultural problems.

Teachers have seen that including IAKP within the curriculum may make the content more relevant and interesting to learners' context in which to learn, and to contribute to a better educational outcome. By integrating indigenous knowledge, educators can use existing cultural contexts of students and build upon student understandings to enhance the depth of their learning and application of agricultural concepts (Chiwanga, 2020). Community members further highlight the recognition of IAKP in formal education, as being an element of validating and preserving the indigenous knowledge in line with empowering the communities and fostering a spirit of ownership to the agricultural development (Mutambara, 2017). Such recognition has contributed to Zimbabwe's preservation of its heritage and to encourage community-led businesses for agriculture.

Agricultural extension officers have noted that combining IAKP and modern agricultural practices could make the extension services more effective. The combinations of the traditional and the modern methodologies allows the extension officers to make case for practices specific to local situations, which will enhance adoption rates and sustainability (Ochieng, 2018). Similarly, students have shown a keen interest in learning about indigenous agricultural practices, recognising the value of learning about traditional agricultural practices as well as modern agriculture. This interest suggests that the explanation for the effect of IAKP may raise student buy-in and motivation to study agriculture.

The introduction of IAKP in the curriculum may also overcome some of the shortcomings inherent in western-based agriculture education. Indigenous knowledge has often provided context-specific solutions that are adapted directly to local ecosystem, climate and socio-economic conditions (Mabogo, 2018). By combining these that Zimbabwean agriculture education can turn into a more holistic and responsive system with a better match for local needs.

Nevertheless, stakeholders also recognise a range of challenges associated with the integration of IAKP including the need for curriculum reform, teacher training and the need for systematic documentation of indigenous knowledge (Pedzisai, 2020). Documentation of indigenous knowledge (Pedzisai, 2020) is indispensable. Addressing the challenge of integrating IAKP into agriculture education requires concerted efforts by policymakers, educators, community leaders, and other stakeholders to develop strategies for the successful integration of IAKP into agriculture education.

7.5 Challenges and Opportunities

In spite of support from stakeholders on the need for embedding IAKP into the curriculum in Zimbabwe, there are several challenges which have continued to impede the process. Chief among these is the lack of documentation, which complicates the formal inclusion (Ndlovu, 2015; Mapolelo, 2019). Knowledge gets circulated qualitatively from one generation to another leading to the risk of attrition or underutilisation unless there are adequate records.

Further, teachers are also not familiar with or pedagogical competent enough to deliver IAKP contents (Kisanga, 2016). Consequently, the application and pedagogy of IAKP targeting teacher training programmes are needed.

Curricular rigidity is also a contributing factor that adds to the problem as frameworks that exist don't necessarily accommodate IAKP content (Mapolelo, 2019). Overcoming these limitations requires policy reforming and participatory processes in curriculum development which actively engage local communities, educators and other key stakeholders.

Nevertheless, opportunities exist to enrich agriculture education in Zimbabwe through IAKP integration; engaging communities in the curriculum development and formally recognise the indigenous knowledge can make the educational content more contextual to promote sustainable agriculture as well as community empowerment (Munyaoro, 2018; Chiwanga, 2020). The embedding of IAKP enables a holistic educational paradigm that addresses local challenges and uses traditional practices depending on ecological and cultural contextual practices.

Moreover, the role of IAKP is to preserve Zimbabwe's cultural heritage and the community agricultural struggle (Sibanda, 2016). The synthesis of IAKP with modern agricultural approaches may increase effectiveness of extension services and endorse approaches which are compatible with local realities (Ochieng, 2018).

Realising these prospects requires strategic interventions in terms of a participatory design of the curriculum, a thorough teacher training and specific policy proposals. These measures favour the systematic inclusion of IAKP, which makes the relevance and effectiveness which basically deal with the agricultural challenges in this region. By integrating indigenous knowledge more than

representation and being an active partner in curriculum design and development, Zimbabwe can proceed with sustainable agricultural development that should boost food security and also help protect cultural heritage.

Empirical findings suggest integration of IAKP to the curriculum has a great potential to enhance the contextual relevance and effectiveness of agriculture education in the Zimbabwean context. In order to realize this integration, it will require collaborative efforts by policymakers, educators, community leaders, and other stakeholders in order to create strategies that fully integrate IAKP into agriculture education.

Based on the results of the research, several recommendations arise for the appropriate integration of IAKP in the agriculture curriculum of Zimbabwe. First, the development of a participatory curriculum framework that involves and engages local communities, educators, and many other stakeholders is key. Second, it should use systematic teacher training programmes specifically targeted to the context of IAKP and its pedagogical application. Third, effective mechanisms for documentation and preservation of indigenous knowledge need to be developed in order to mitigate loss of knowledge. Finally, policy modifications that would create curricular flexibility and assist in IAKP integration are suggested.

8. DISCUSSION OF FINDINGS

The study shows deep implications for students' curriculum development in the agriculture education sector in Zimbabwe. Incorporation of IAKP (IAKP) helps to augment contextual relevance that intrigues sustainable agricultural practice and enables the strengthening of local communities. This is corroborated by the stakeholder's recognition of the critical role of indigenous knowledge in solving local agricultural problems (Sibanda, 2016; Munyoro, 2018; Ochieng, 2018).

A major implication of these findings is the need for participatory processes in curriculum development that involve the local communities, educators, and others in the development of agriculture education. Such inclusive approaches ensure that contents of education pursue local contexts and enhances effectiveness in the achievement of promoting sustainable agriculture (Chiwanga, 2020; Mutambara, 2017). In addition, this strategy helps to preserve Zimbabwe's cultural heritage and to encourage community-facilitated agricultural efforts.

Finally, the IAKP curriculum integration brings various benefits. It strengthens the relevance of agriculture education and increases its effectiveness in coping with local problems. IAKP is promoting sustainable agriculture by tapping into traditional practices adapted to the local ecological and cultural context (Mabogo, 2018; Motsara, 2016). Additionally, recognition of the indigenous knowledge empowers the communities and helps build up a sense of ownership in the development of agriculture.

However, the integration of IAKP (IAKP) is also challenging according to several aspects. Some of the challenges are lack of documentation of indigenous knowledge, lack of capacity among teachers in delivering the content of IAKP and rigid structure of curriculum (Ndlovu, 2015; Mapolelo, 2019; Kisanga, 2016). Overcoming these obstacles requires well-structured strategies, including involving teachers in comprehensive training, systematically reorganising policy and even documenting indigenous knowledge.

Comparative analysis with extant literature shows coherence and similarity with the research done in other African contexts. Scholars from different African countries have done similarly by highlighting the importance of incorporating indigenous knowledge into agriculture education to promote sustainability and relevance (Ochieng, 2018; Nkambule, 2017). The challenges identified herein - especially documentation inadequacies and lack of teacher capacity - are reflected in the overall discourse on IAKP integration (Kisanga, 2016).

The identified benefits in this study are consistent with broader discussions in the literature to reinforce the idea of the importance of indigenous knowledge in the promotion of sustainable agricultural practices and cultural heritage (Sibanda, 2016; Munyoro, 2018). The proposed participatory methods of developing curriculum are also in line with suggestions for effective IAKP integration in formal education systems (Chiwanga, 2020; Mutambara 2017).

Overall, the findings add to the literature on the importance of IAKP in the field of agriculture education. They highlight the need for contextually relevant pedagogies which take advantage of indigenous knowledge and involve communities in the design of curricula processes. Addressing the challenges that are associated with IAKP integration can therefore improve the effectiveness of agriculture education within the Zimbabwe context, leading to more sustainable agricultural activities and empowerment of the community.

9. RECOMMENDATIONS

A model of participatory curriculum development is suggested, which includes collaboration of local communities, educators, agricultural experts, and policymakers to shape agriculture education. This way the relevance and rationality are ensured, which solves certain local problems of agriculture and community members use their own knowledge (Chiwanga, 2020; Mutambara, 2017). The involvement of community elders and traditional leaders in curriculum planning can help to ensure that traditional knowledge and practices are integrated into the content of the education. Moreover, matching curriculum relevance to local ecological and socio-economic conditions can increase the effectiveness of curriculum in stimulating sustainable agriculture.

Policy revisions are imperative to be in support of integration of IAKP into agriculture education. The structural and methodological framework for incorporating indigenous knowledge into teaching practices in policy restructuring of the curriculum policy by providing a chance to include IAKP topics and methodologies. Developing explicit guidelines for the integration of an indigenous knowledge further prepares the teachers to effectively deliver the content of IAKP. Stimulating interaction among stakeholders at different stages of the curriculum development and implementation process promotes consonance and ensures the curriculum meets the needs of the local population.

The participation of stakeholders is still crucial for successfully integrating IAKP. Engaging local communities in the development and implementation of the curriculum ensures that the curriculum is contextual and effective.

Agricultural extension officers can take center stage in spreading the IAKP practices and so promote the adoption of sustainable farming practices by farmers. Policymakers can buffer the barriers to integration by allocating resources to and supporting them to facilitate the delivery of IAKP content by educators.

More studies will need to be done to record and preserve indigenous agricultural knowledge in Zimbabwe. Developing effective approaches for working with the IAKP in agriculture education can help to increase its relevance and effectiveness. Assessment of the outcomes of IAKP integration on agricultural productivity and community empowerment provides insights into an assessment of benefits and challenges of IAKP. Documentation deficits and limited instructional capacity should be addressed during future inquiries. Research priorities should be the determination of best practices to support integrating IAKP in a wide variety of settings, developing models to cooperate IAKP and modern agricultural practices, and testing IAKP contributions to sustainability of agriculture and food security.

Adoption of these recommendations helps Zimbabwe to fortify the agriculture education framework and promote agriculture education for a more sustainable agricultural system, preservation of cultural heritage, teaching skills and empowering communities. The integration of IAKP in agriculture education has to be done because it generates numerous benefits- i.e. helping farmers in the promotion of sustainable agriculture, food security, cultural preservation, etc. Nevertheless, overcoming challenges attached to it is key to successful implementation. Collaborative efforts among policymakers, educators, researchers, and communities are imperative if who integrate IAKP are to help develop an effective strategy for properly integrating IAKP into sustainable agricultural practices throughout Zimbabwe.

10. CONCLUSION

This research concludes that there is a need to incorporate IAKP (IAKP) into the Zimbabwe agriculture curriculum in order to support sustainable agriculture, preserve cultural heritage and empower Africa communities. Findings notion stakeholder support for IAKP to be included, as adding value in addressing local problems in agriculture and context specific education. However, hurdles such as lack of documentation, limited teacher capacity and curricular rigidity still exist.

IAKP continues to play a major role in pushing for sustainable agricultural practices as well as preserving the cultural heritage of Zimbabwe. Embedding indigenous knowledge within curriculum increases the relevance of agriculture education and improvement of agriculture education to coincide with local challenges. Acknowledging the value of IAKP also empowers the communities and leads to a collective sense of ownership of the agricultural development.

There is a demand for curriculum decolonisation in the Zimbabwe agriculture education sector. Decolonising the curriculum includes understanding and incorporating traditional knowledge and perspectives and thus making education more contextually appropriate and effective. This initiative requires curriulum development through participation, policy revision, and interaction with stakeholders so that agriculture education is responsive to locals and to developing sustainable agriculture.

Policymakers/educators and stakeholders are encouraged to provide intervention so that the integration of IAKP (IAKP) into the Zimbabwe agriculture curriculum plan can be made possible. This includes participating in participatory processes of designing curricula involving local communities, educators, agricultural content specialists and policy makers. Revising policies to support IAKP integration is equally critical that offer a framework for integrating indigenous knowledge into teaching practices. A whole framework for incorporating indigenous knowledge into instructional practices is essential. Providing resources and support to teachers as required to equip teachers for effective delivery of content in IAKP. The documentation and preservation of indigenous agriculture is a means of avoiding the extinction of this knowledge and ensuring its export to the future. Through these concerted efforts, Zimbabwe can promote sustainable agricultural practices, preserve cultural heritage and empower communities through providing agriculture education that is context relevant. The imperative for collective stakeholder action is nonetheless decisive and highlights the advanced stages of IAKP integration and maximisation of indigenous knowledge benefits for the development of agriculture.

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