

Indigenous Tools of Capturing Knowledge: Trachoma Bead System

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Abstract

This paper presents the experience from Kajiado District in Kenya, where the application of the communities' innovative and appropriate indigenous knowledge has contributed to the reduction in prevalence of Trachoma.

The reduction in the prevalence of trachoma facilitates mainly economic productivity; a key factor in the contribution towards eradication of poverty, and ensuring environmental sustainability, both of which are Millennium Development Goals.

It is therefore the premise of this paper to serve as an example of advocacy for consequent application and strengthening of Indigenous Knowledge approaches in the development process in Africa. The paper also seeks to contribute to the conference theme on “**Development Environment and History**” by demonstrating the positive effects of listening to the community; through which locally available resources are utilized to ensure sustainability of interventions even after project phase out.

Introduction

Indigenous Knowledge continues to be a greatly underutilized resource in the development process in Africa, while the harnessing of this knowledge provides the basis for problem solving strategies for local communities, especially the poor.¹

AMREF strives to realize its strategy through one of its three programmatic themes, Community Partnering for Better Health that recognizes the community as an equal partner in the development process that should be involved at all levels of community development. This programme theme is grounded in health as a human right whereby health systems are tailored to better meet the needs of the poor. By placing people and communities at the centre, the programmes have wider access and are able to utilize indigenous knowledge which can be applied to promote development.

It is critical to give a new meaning to empowering poor people and helping them to have a voice –not as recipients of knowledge but as contributors and protagonists of their own development.² The challenge today in community development is not lack of technology, but rather the failure of development partners to recognize the communities resources and in finding better ways of learning about indigenous institutions and practices and where necessary to adapt modern techniques to the local practices.

What is Indigenous knowledge?

While available literature does not provide a single definition to the concept, consensus has been built around common perceptions of the same. Indigenous Knowledge is the local knowledge that is unique to a given culture or society and forms the basis for decision making within communities.³

Other Definitions of IK definitions

1. Indigenous knowledge is the information base for a society, which facilitates communication and decision-making. Indigenous information systems are dynamic, and are continually influenced by internal creativity and experimentation as well as by contact with external systems. (Flavier et al)

2. Indigenous knowledge is the knowledge that people in a given community have developed over time and continues to develop. It is based on experience, often tested over centuries of use, adapted to local culture and environment, and is dynamic and changing.

¹ Indigenous Knowledge for Development (A Framework for Action) – The World Bank

² James Wolfensohn (President World Bank) – Local Pathways to Global Development)

³ Warren et al 1991

Why is Indigenous Knowledge Important?

Indigenous Knowledge in its nature is experiential, having been passed from one generation to another. It forms the basis of a resource that demonstrates the way of life of a community that if tapped into can provide a great opportunity to learn and understand what already exists within the community, thus enhancing any initiatives to be implemented in the community.

As existing knowledge systems continue to neglect indigenous knowledge, it is imperative that this form of knowledge systems and those who possess it be recognized as the main key factors and not capital, that leads to sustainability of social and economic development. It is therefore important to build upon this knowledge not only to mobilize capital, but also to mobilize communities.⁴

Background

Most African communities have traditionally used various distinctive symbolic icons such as personal clothing, and ornaments to articulate their identity and position within their societies. Beads are some of the commonly used icons used globally by communities to demonstrate status, clan, and age/age set within these communities. In addition, beads have been used globally for centuries as a form of numeracy/literacy within their specific contexts. For example; from the North American native Indians to the Yoruba, Zulu, Bantu, and Xhosa tribes of Africa, beads were used as currency in trading and were distinctly shaped or colored in each of these cultures therefore demonstrating their importance in those communities. Today some communities like the Eastern Africa Maasai, Turkana and Kalenjin, to name a few, continue to use beads in different designs to denote the age of a person.

Materials and Methods

Of particular interest are the Maasai communities in Kenya who are largely nomadic pastoralists who have been identified with the use of beads for centuries. They have used beads as body ornaments and also to communicate various aspects of their traditions and cultures such as, identity, position and events within their society.

To this end the Maasai community has identified innovative ways of using their beads not only for what they are traditionally meant for, but also for literacy and monitoring trends of diseases such as trachoma within their communities.

Trachoma is the second leading cause of blindness in the world. Globally, it is estimated that 6 million people are blind due to trachoma. The elimination of blinding trachoma (GET 2020) is a component of WHO VISION 2020; a global initiative to eliminate avoidable blindness by the year 2020. In Kenya it is the second leading cause of avoidable blindness accounting for 19% of all cases of blindness (Kenya National Eye Care plan 2005). The disease caused by a bacterium called Chlamydia Trachomatis and is spread from one person to the other directly or through contact with flies. The risk factors include scarcity of clean water, poor hygiene and sanitation, hot, dry and dusty climates.

Trachoma is closely related to poverty, commonly referred to as “the disease of the poor” and is endemic among the poorest of the poor in the developing parts of the world, where environmental conditions and access to water and health care are very poor. A survey carried out by the International Eye Foundation (IEF) in 1981 showed that the prevalence of blindness in Kenya was 0.7%, representing 210,000 people. The main causes of blindness being senile cataract 43%, trachoma 16%, and glaucoma 14%.

“Nancy Thuo of Sight Savers International, whose statistics are startling, says that of the 224,000 Kenyans without power to see, 150,000 are as a cause of Trachoma.”⁵

⁴ 1998/99 World Development Reports

⁵ <http://www.ocusource.com/main>

AMREF Trachoma Prevention and Control Project – Case Study

Trachoma is endemic in 18 districts mainly in rural areas where water and sanitation is scarce. One of which is Kajiado District located in the Rift Valley Province of Kenya. AMREF implements a Trachoma Prevention and Control Project in the district where the main inhabitants are the Maasai who have for decades continually faced devastating effects of trachoma.

The program is as a result of collaborative effort with MOH, local communities, Pfizer Incorporation., and Sight Savers International (SSI). In 2002, AMREF collaborated with SSI and the University of Nairobi (UON) to carry out field research in Shompole location, Kajiado district. No trachoma interventions had been introduced in that part of Kajiado where the overall prevalence of trachoma was 59% (WHO minimum criteria for declaring trachoma a public health problem is 20%). Of the children under 10 years of age, 85% were found to have Trachomatous inflammation - Follicular (TF) and 31% had Trachomatous inflammation - Intense (TI). (Matende et al 2002).

In 2004, AMREF, MOH, UON and other key eye care partners conducted a national trachoma prevalence survey in six districts in Kenya that included Kajiado, Narok, Samburu, West Pokot, Baringo and Meru North. The findings indicated both active and blinding trachoma as public health problem in the first four districts listed above with blinding trachoma being a problem in the last two (National Trachoma Survey 2004)

WHO Model - Surgery, Antibodies, Facial Cleanliness and Environmental Sanitation (SAFE)

The project primarily uses the model strategy recommended by the World Health Organisation (WHO) which consists of Surgery, Antibodies, Facial Cleanliness and Environmental Sanitation (SAFE). Surgery is needed for the correction of Trichiasis (in-turned eye lids), targeting those that are in danger of losing vision. An Antibiotic, commonly used is Tetracycline Eye Ointment (TEO), used to treat active trachoma, reduce length of inflammation, minimize scarring and transmission of trachoma bacteria from one person to another. TEO is commonly used because it is cheap and easy to administer. WHO now also recommends the application of a systematic oral antibiotic known as Azithromycin for routine and mass treatment of trachoma as a means of eradicating blinding trachoma.



Facial Cleanliness reduces transmission intensity within households and communities and augments the **A** component. This is facilitated by the use **leaky tins** at households and schools to conserve the scarce water for face washing and prevent contamination.



Use of leaky tins to conserve water for face washing and prevent contamination

Environmental improvements which include improved access to water, pit latrines, and hygiene education and information. This forms part of long term strategies for eliminating trachoma through limiting breeding sites of the domestic housefly (*Musca sorbens*) which is heavily implicated in the transmission of trachoma by feeding on eye discharges and preferential breeding on human faeces.



Use of a less⁶ as a tool for Information Education and Communication (IEC)

Innovative Approach – Coloured Beads

Through working with the Maasai community that is largely illiterate, AMREF identified an innovative approach of monitoring the trend of trachoma at household level that consequently builds into informing decision making processes by the formal health system. The project uses coloured beads, traditionally meant for identification and beauty to collect data for the Community Based Health Management Information System (CBHMIS) as a means to monitor the trend of trachoma. Most importantly, the tool is useful for heads of the bomas⁷ and the village health monitors who cannot read & write among the pastoralist in the district.



The use of the beads is widely acceptable since it's in essence a way of life for them, hence making them an easily understood and hence a suitable means of monitoring and tracking the trend of trachoma.

The string of beads used for surveillance of trachoma comes in three colours and represents the number of persons living in a boma, **Red** for an active case of trachoma, **Blue** for an inactive case and **White** for unexamined household members usually those that have migrated in search of pasture. This way, the Maasai community is able to decipher the status of all in the boma and then

take the necessary measures.

The Village Health Monitors are trained by AMREF to examine the eyes, identify, grade and treat active trachoma as well as record findings of a boma on a monthly basis using the beads register. Members of each household are examined within a traditional Maasai manyatta and the findings recorded in form of specific coloured beads inserted into sisal or similar string. The eldest woman of the household is responsible for the beaded string by hanging it on her neck with other beadwork. This form of diagnosis is also a health education tool whereby households are taught on preventive measures against trachoma such as use of leaky tins for hand and face washing.

⁶ Traditional clothing for Maasai

⁷ Boma – homestead for maasai

The trachoma monitors (literate CHWs) will then visit each manyatta, to supervise the volunteers and compute the data to be forwarded to AMREF team for quality control and analysis. This process assists to decide the next course of action depending on the findings. For example if there are many red beads in a certain locality then immediate action is taken i.e. AMREF visiting, educating & treating the affected.

Achievements

The success of the project can be greatly attributed to the combined efforts of using the SAFE strategy and the communities' innovative and indigenous method of record keeping by using coloured beads thereby contributing to the reduction in prevalence of the trachoma disease prevalence in the area from 46% in 2003 (Baseline Survey) to 16% in 2006 (Project Evaluation 2006).

Specific results include;

- Establishment of elements of sustainable community-based trachoma control in the district including; transfer of knowledge and skill to community members and CHWs; data collection using appropriate technology (coloured beads); appropriate and culturally accepted IEC materials; and implementation of a referral system.
- 85% increase in trachoma awareness among the target groups
- 300% reduction in prevalence of blinding trachoma (TT) in the intervention area
- Over 500 community health motivators and 20 community health monitors have been trained, 73% remain active, and over 80% are women
- 34% increase in lid surgery coverage in the programme area
- Over 4,000 tetracycline eye ointment antibiotic tubes are distributed annually
- 60% increase in face washing among children aged 6-14 years using leaky-tins
- Establishment of elements of sustainable community-based trachoma control in three locations of Magadi Division, 85% increase in trachoma awareness among the target groups

Lessons Learnt

- Community participation is key for effective and sustainable intervention
- The Use of appropriate and relevant technologies such as coloured beads for household trachoma surveillance improves monitoring and evaluation
- **SAFE** interventions are feasible in nomadic and semi-nomadic communities; however, cross migration reduces impact of trachoma control.
- Leaky tin is an innovative way of maximizing water use in inadequate water resource areas.
- Networking among partners is crucial for long-term success

Scale-Up

Using lessons learnt from the Kajiado experience AMREF in consortium with MOH, Sight Savers International (SSI), Christen Blinden Mission (CBM) with additional financial support from the European Commission is scaling up its trachoma project to cover 2 more districts of Samburu and Laikipia and conduct a prevalence survey in Kitui, Laikipia and Mwingi using identified community specific symbols. The project will target a population 951,684 in the three districts and 80% of which will have been treated with antibiotics by project end.

Discussion

While modern approaches have brought about tremendous results; we have the capacity to feed more six billion people satisfactorily; vaccinations to protect our children from once deadly diseases, we communicate with the help of satellites around the globe and compete in global market places with our products. Yet despite these achievements we still have the crisis of hunger, HIV/AIDS, illiteracy, isolation and conflicts and abject poverty. To this end we have learnt that science and technology alone cannot provide all the answers or solutions to these unresolved problems characterized by unequal distribution of wealth and opportunities.⁸

Some of the most important aspects of rural health and maternal survival relies on Traditional Birth Attendants (TBAs) and traditional healers; products of indigenous knowledge management. Although many expectant women have been shown to attend antenatal clinics, most deliveries are conducted at home by 'untrained' TBAs. Their knowledge of midwifery has been passed down from generation to generation until, just like the beads, becoming a part of a culture and tradition. As much as health workers might encourage women to deliver at health facilities, known or unforeseen factors i.e. emergency delivery, distance to a health facility, cost or sociocultural values, contribute to the high delivery at home, thus, making it absolutely necessary for TBAs to be recognized as a bridge between the health system and the community. If trained the TBA's play a key role in contributing to the reduction of maternal mortality through making referrals incase of delivery complications.

It is therefore imperative that indigenous knowledge management systems be preserved for the good of communities who still rely on them for survival. This is why it is important that indigenous knowledge management systems be recognized as much as part of problem-solving as their counterpart 'western' knowledge systems. Therefore, Integration of modern approaches and adapting of the same in a community should be carefully reviewed prior to planning and implementation of community based projects; the use of beads in the trachoma project emphasized on this point, thus the successful outcome of the project.

Opportunities

The use of the coloured beads within the context of the Maasai community to implement the Trachoma Prevention and Control Intervention was useful in bringing the community on board and hence promoting the participatory approach of the project. More importantly the success of this intervention has also contributed to the achievement of some of the Millennium Development Goals. For example; the reduction in Trachoma prevalence ensures fewer people are threatened by the disease causing blindness hence an increase in economic productivity and a step towards poverty eradication (MDG 1)⁹.

The use Maasai coloured beads is just one of the many indigenous approaches that can be used in the different development sectors. It mainly serves as a clear demonstration that if we listen to the community, partner with them, and utilize locally acceptable resources, we can contribute to reducing the gap between the community and the modern health system. For example, through the monthly monitoring by village health monitors, active cases are reported and referred to a health centre and appropriate action is taken. This system is sustainable in the sense that when AMREF phases out the project, the links between the two systems already in place will continue to ensure a continued surveillance and containment of the disease.

⁸ President Benjamin Mkapa (Local Pathways to Global Development)

⁹ MDGs

As social changes continue to occur, so do the communities and their cultural values hence enabling communities to easily adapt to change in the perceptions of various practices. For example; Due to increased literacy and awareness, communities are able to acknowledge the adverse effects of some cultural practices such Female Circumcision to the girl-child, hence the reduction of that practice.

Example;

AMREF's "Umkhanyakude" Traditional Healers Practitioners Project in South Africa links the MOH with traditional healers to the benefit of both, and the communities they serve. Among many other things, traditional healers have learnt how to avoid transmitting HIV, and avoid contracting TB from their patients and how to keep health records, In turn the MOH recognizes the healers' competencies and works with them to track and refer patients, especially these on ARVs and DOTS therapies.

Traditional healers are yet another community component of public health in the developing world that cannot be ignored. They are another good example of those who possess indigenous knowledge that continues to be relied on by the communities in which they serve for treatment and preservation of their health. Their knowledge of medicine in the modern sense has been utilized in the past for the development of today's medicine and management of diseases.

Integration of Indigenous and Modern Knowledge

This paper does not seek to disregard the use of modern approaches but aims to advocate for the acknowledgement of indigenous approaches as a key resource that can contribute towards the success of development initiatives. In addition the paper intends to demonstrate that the integration of these two resources as fundamental assets in ensuring that realistic and relevant solutions to development are to be found.

Challenges

It is important to recognise that not all indigenous knowledge is useful or beneficial e.g. Female circumcision and it is therefore important to understand and validate the practice before incorporating it into development initiatives. Development partners should identify appropriate approaches that are beneficial to the communities and build their capacity to identify and change from those that are not.

Various issues surround the use of indigenous knowledge;

- The role of ICT in the exchange of IK ensuring that it is not distorted in any shape or form
- If IK is to be adopted and integrated in the development process, national policies need to be put in place to support and facilitate the process.
- Attempts to exchange IK may be harmful if used outside its original contexts hence compromising relevance.

- The property rights of this knowledge – Should the communities be paid for use of their knowledge is used e.g. medicinal plants used by pharmaceutical companies, recognition of communities when their IK used offering positive impact.

Conclusion/Recommendation

Communities in Africa have a great wealth of knowledge that has been generated over the years and faces the threat of extinction due to neglect. To this end it is necessary for African countries to identify and deploy resources to ensure that this key resource is preserved. National policies and structures should be developed to ensure quality and consequently integration of appropriate IK in development initiatives.

The development partners must also be willing to learn and recognise this knowledge as a valid and integral part of sustainable development and ensure that this knowledge is documented and disseminated within the specific local context and beyond.

Often Information and Communication Technology poses as a threat or constraint to IK but if used appropriately it can be a powerful tool for to widen the scope of learning and sharing within the continent and globally. ICT can also be used to raise awareness on the resources that exist within the communities and as an agent of change in the communities.

The bead system is one example of an innovative, cost effective and sustainable health monitoring tool that can be replicated in other similar areas of Africa not only for trachoma but also for other health issues and where applicable be integrated into formal Community Based Health Information Management Systems (CBHMIS).

Many examples can be used to demonstrate that indeed indigenous knowledge can provide the basis for problem solving strategies for local communities. However it is the responsibility of all key players in the development process to recognise that communities will only truly and sustainably own these initiatives if they are recognised not only as recipients of knowledge but as contributors playing lead roles in their development.

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Reference

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