

# **Dialogue among Civilizations: *The link with Science, Technology and Development.*<sup>1</sup>**

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## **Abstract**

Dialogue is about exchange of knowledge. Science is knowledge and technology is the application of that knowledge for the benefits of society. Hence Knowledge provides a link between science and technology on one hand and dialogue among civilizations on the other. This paper examines this link to see how dialogue among civilizations promotes and is promoted by science. It addresses three questions. First, how does science promote dialogue among civilization? Second, how does dialogue among civilizations promote science and then finally how can dialogue promote development through science and technology?

## **Introduction:**

In the last ten years the world has witnessed an increase in tension both between nations and within nations. Some of these tensions have led to major wars, civil strife and other types of conflicts. Parallel to these are the challenges such as environmental degradation, loss of biodiversity and climate change which confront our very existence. Resulting from these conflicts and the environmental problems are the increases in hunger, misery and poverty. At the same time the world is also witnessing a trend in globalization with tendencies towards the homogenization of cultures. The world is gradually moving towards a universal culture which may not include the potential benefits from all cultures and which may threaten the existence of other cultures or relegate them to sub-culture status.

Some of these problems have their root in mistrust of each other, lack of respect for each other's knowledge and values leading to the exclusion of knowledge and values from other civilizations. It is an established fact that throughout history ignorance ( and in some cases contempt) of other cultures have led to conflicts. It has also stifled progress because valuable knowledge are not shared by all.

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A proposed solution to these problems is the promotion of dialogue among civilizations and cultures. In recent years this issue has taken centre stage especially in conflict resolution and the promotion of peace. Through dialogue it is possible to assure peace, tolerance, cultural diversity and promote development. In a world with a multiplicity of cultures it is necessary to promote universal values without sacrificing the diversity which is appreciated in UNESCO's universal declaration of cultural diversity (2001). Dialogue among civilizations will ensure that globalization do not prevent local cultures from thriving. It is in the light of this that United Nations declared 2001 the year for Dialogue among civilizations. However dialogue should not be a mere discussion and conversation. It should be action-oriented with an objective of solving problems that arise out of misunderstanding, ignorance and injustice. A conference on dialogue must not just look at how we can promote dialogue among civilizations. Rather it must also ask the question "how can we use dialogue to promote development" or solve other societal problems"? In this respect this paper is looking at Dialogue as a strategy for socio-economic development through the link with scientific knowledge. The paper is therefore answering the question "how can dialogue among civilizations promote scientific advancement of Africa?" The paper proposes modalities for dialogue-related actions for strengthening the capacity of the region and promoting development.

## **Sciences**

It is important as we develop the discussion that we first understand what science is . It is a class of knowledge that tell us about the nature of the world that is well beyond what it appears to be like on the surface. The concept of scientific knowledge and the admissibility of a body of knowledge as modern science has always been a monopoly of the western world. There were no dialogue on the issue of what is scientific knowledge until recently when the west realised that there is vast resource base of knowledge in other civilisations and the awareness on the part of the third world that they need western science to develop their economies. A true dialogue is now emerging leading to the promotion of Indigenous knowledge. At the same time there is also need for dialogue to integrate others into modern scientific community.

## **Science, Dialogue and Knowledge**

Science is knowledge and dialogue is the exchange of knowledge about each other. Furthermore science advances through research and exchange of ideas and knowledge. Hence knowledge is the link between science and dialogue. Through this link both science and dialogue among civilizations are mutually strengthened

## How can science promote dialogue among civilizations?

Science can be a *witness* in dialogue among civilizations. Scientific evidence is sometimes crucial in resolution of disputes, mistrusts and terminating the blame-game. In such a case attempting to hold a dialogue among civilizations, will be futile without such evidence. Science has over the years earned the respect of being factual. In some societies confidence in scientific evidence has reached a point of religion where people believe even without understanding. This respectable position enjoyed by science enables it to be a valuable arbiter in dialogue among civilizations.

There are several issues of global concern, with potential for conflict, that require discussion based on scientific evidence. Often these discussions require detailed knowledge of the interaction between man and its environment. Science provides the basis of such discussion. For example discussion on climate change and the role of various countries in the depletion of the ozone layer can only progress effectively if there is sound scientific evidence to inform the discussion. Similarly disputes over access to water resources are being increasingly discussed through dialogue in scientific communities.

Science enriches dialogue. The latter is empty without knowledge and Science is part of the knowledge base of any society. Every society has its views of nature. That is science. It provides the *content* and the *language* of dialogue.

Scientific community can provide a *forum for dialogue*. Through out history science has progressed through dialogue because the creation of knowledge occurs through exchange of ideas, facts and theories. The search for scientific knowledge has often led to dialogue within the community which normally cuts across several civilizations. Hence the scientific community has been a centre for dialogue and can therefore play an important role in the promotion of dialogue among civilizations. Over the years the scientific communities have put in place several mechanisms for dialogue which could be used as vectors for dialogue among civilizations. These include networking, publications and dissemination of information and exchange visits among scientists.

*Technology* which is an application of science can also facilitate dialogue among civilizations. Since dialogue thrives through communications, then recent advances in communications technology should help the process. The emergence of Information and Communications Technology (ICT) has made all forms of communication easy and fast. Hence ICT in particular has facilitated dialogue. However it has also led to globalization which has accelerated the homogenization of cultures. The latter *per se* may not be bad if it is arrived at through an inclusive process. The ideal globalization, which is facilitated by dialogue and equitable access to ICT, would identify and blend good practices and ideas from all cultures.

## **How can dialogue among civilizations promote science?**

Dialogue among civilization facilitates the growth of all knowledge including scientific knowledge. Since science is knowledge, it can be concluded that it is enhanced through dialogue. The process by which science is enriched can be illustrated by examining the way science grows.

Science advances through research and exchange of knowledge. Science would progress at a very slow pace if each researcher were to start from the very basics. Imagine if a scientist from Europe were to set out to look for a medicinal plant in an African tropical forest. With millions of species in that forest it will probably take him his entire lifetime to complete the analysis. However he will progress faster if he were to engage in dialogue with the local community. He will then start from what the local people already know about the healing powers of the various plants. There is always some unique knowledge in each civilization that can be used to advance our understanding of nature. Hence dialogue will enable the rapid advance of science by ensuring that valuable time is not wasted searching for knowledge that already exists.

The two pillars of science are facts and hypothesis. The latter can be a tool for increasing the outputs of the former. In the preceding paragraph, we have shown how dialogue facilitates the rapid accumulation of facts. Now we need to know if dialogue also enhances the transformation of hypotheses into theories. In addition to facts, each civilization has numerous amount of hypothesis to explain the way they observe the world. Hypothesis is sometimes rejected through observable facts. However some are assessed through dialogue. The later can aid its falsification process through exposure to other cultures and civilizations.

Thus, scientific knowledge can grow through dialogue because it aids its objectivity and efficiency in data collection.

## **Dialogue, science, Technology and Development.**

Dialogue among civilizations should be looked upon as a tool, a strategy for achieving peaceful co-existence, tolerance, development and security. It is not an end in itself. It is a step (or a process leading) to a desired goal. We need to move away from looking at dialogue as mere conversation and start looking at it as tool for development. In this regard we should identify problem solving mechanisms that involve dialogue. We should look at the aspects of our development which can be enhanced by dialogue among or within civilizations. Dialogue is already a tool for peace and conflict resolution which is sorely needed in the Africa region. Dialogue promotes understanding leading to a peaceful co-existence.

The relationship between Dialogue among civilizations and peace, security and development is fairly obvious. However that between dialogue, science and Technology

and Development is not so obvious. Therefore we need to examine the relationship between dialogue among civilization and science and determine the possible role this relationship can play in addressing other pressing issues in the region such as poverty, deforestation, environmental degradation and pandemics of infectious disease.

The question that should be addressed is whether ignorance of the local cultures retards the development process. Or is ignorance of cultures leading to wrong prescriptions of technical solutions to local problems?

It has been shown in this paper that dialogue promotes the growth of science, strengthens scientific capacity and hence it should be able to facilitate economic development and address other socio-economic development issues. Thus, scientific knowledge which is the engine of recent economic advances in most countries can play a role as a medium through which dialogue can bring economic benefit to society.

There are two categories of science-related problems that dialogue among civilizations can address. In the first category are those problems whose solution can emerge from an improved scientific knowledge. These include, in general, issues where local knowledge can be used to strengthen western scientific knowledge for the progress of society. Examples would include problems relating to the environment, biodiversity, and commercial use of medicinal plants. For this class of problem, dialogue facilitates the enrichment and growth of scientific knowledge that will be used to solve socio-economic problems. The absence of dialogue among civilization leading to contempt for some of the scientific knowledge of indigenous peoples, has led to loss of valuable resources and knowledge.

The second category are problems which can be resolved not by creating new knowledge but by ensuring equitable access to the existing knowledge base. In this category one would include the problem of the digital divide, the marginalization or exclusion of certain communities from participation in modern science. Dialogue among civilization is essential for the reduction of the digital divide and the integration of all cultures into the modern global scientific community.

## **Action-oriented dialogue**

Action-oriented dialogue must provide forum for the discussion of the problems highlighted above. Some of the socio-economic problems which afflict the continent require the intervention science. Hence for such problems the dialogue among civilizations must have one of two objectives: to increase the scientific knowledge base or to reduce the disparities in technological capabilities. We give some examples of action-oriented dialogue.

*Documentation and dissemination of Indigenous knowledge in use in environmental protection.* Scientists should engage in discussion with local people to identify the

beneficial aspects of local knowledge. A forum should be provided for such exchange of knowledge. First, we should identify the bottle necks to such dialogue. High among this will be the threat of losing control of the knowledge. Thus a system should be established to protect the ownership of the information so that there is free dialogue. In Africa, the UNESCO programme and NEPAD science and Technology plan of action have made the promotion of such dialogue leading to the establishment of database of indigenous knowledge a priority. The world Intellectual Property organisation (WIPO) is obviously concerned about the property rights of the local people and no doubt the database on Indigenous Knowledge will not be possible unless some measures are put in place to protect the ownership. This particular activity will be very useful in environmental sciences, biodiversity conservation and rural development and poverty eradication.

*Developing participatory approaches to technological issues related to Poverty eradications*

It is an established fact that several technologies introduced in Africa have failed to solve the problems they ere intended to address because the opinion of the users were never solicited and hence their inputs were never incorporated into the design of the technical solution. In effect, their failure was due to the lack of dialogue between the scientists and the local users of the technology. The development of a system to involve local opinion and experience in technology development is very important. This is particularly true for agricultural technology, rural technologies in general, water supply and reforestation projects.

*Exploiting the Diaspora scientific community through exchange visits/ integration of Africans in the global scientific community.*

Brain drain is not a product of dialogue. Rather it is a facilitator of dialogue. It provides a medium for dialogue among cultures. It allows people from different cultures who may migrate to another country for economic reasons to interact, become aware of other cultures and merge into a single community. Unfortunately the main beneficiary of this particular dialogue among civilizations is the host country. The source country of the brain drain only benefits from the funds that are occasionally remitted by its citizens. It is important that the other benefits resulting from cultural exchange be shared by both the source and receiving countries. For instance through brain drain multi-racial scientific communities have emerged in several countries in the northern hemisphere. The host countries are benefiting from the resulting multi-cultural dimension of the scientific enquiry and the enhanced scientific capacity. In the specific case that is relevant to the promotion of science and technology in African, it may be useful for the continent to put in place modalities for exploiting the scientific capacity available in the Diaspora scientific community.

Scientists must learn from the way the local football associations in various countries use their foreign based players to strengthen the game at home and also integrate the continents footballers into the global football community.

Examples of activities that could be undertaken to promote the integration of African scientists into the global scientific community include scientific conference and exchange visits involving Diaspora scientists and scientist on the continent. It will also include networking and twining of institutions in Africa with those hosting African scientists abroad.

*Bridging the digital divide: Opportunities for dialogue not adequately utilized because of the digital divide*

The preceding proposal for action have focused on the objectives of building, strengthening and utilizing scientific capacity for development through various forums that offer the possibility for dialogue. There are cases where the capacities already exist and in that case the issue is one of equitable access to the scientific knowledge. It was mentioned earlier in this paper that Science and Technology offers the means to promote dialogue among civilization. Unfortunately for technology to be useful in dialogue it must be available to all sides involved in the exercise. This is not happening at the moment. The most obvious example is in the access to ICT. There are big disparities in access to this technology which is leading to the marginalization of other civilizations. The international community, working through scientists and engineers, should engage in a dialogue with specific objective of reducing the digital divide.

## **Conclusions**

In conclusion it can be reiterated that dialogue among civilizations can lead in the growth of science and Technology. The latter can also facilitate the promotion of dialogue. Hence Dialogue among civilizations on one hand and Science and Technology are locked in a mutually reinforcing cycle. Through the strengthening of Science and Technology Dialogue promotes development that is sustainable. To make this happen it is recommended that action oriented dialogue mechanisms be put in place to promote participatory technology development, use of indigenous Knowledge and the integration of African scientists into the global scientific community through their Diaspora links.