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ROLE AND STATUS OF SCIENCE, TECHNOLOGY AND INNOVATION IN PROMOTING SSC AND TRIANGULAR COOPERATION: CASE OF ZIMBABWE

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ABSTRACT

The Department of Science and Technology Development, with the Ministry of Higher Tertiary Education Science and Technology operates within the framework of the Science and Technology Policy with a mandate to promote, facilitate and coordinate the strategic application of Science and Technology into the main stream of the economic activities in Zimbabwe. In order to achieve the above goal the Department of Science and Technology Development works with all Science and Technology related sectors of economy chief among them; Agriculture, Energy, Research and Development Institutes, Mining, Information and Communication Technology, Intellectual Property Organisations, Small to Medium Enterprises, Education, Health, Environment and Finance.

This paper seeks to present the impact, challenges and opportunities presented by use of Science and Technology Diplomacy to break political impasses by ensuring collaboration of all global nations through use of scientific solutions to local regional and global challenges using available material, technologies and capital and Science and Technology human resources. The term "Science and Technology diplomacy" is used to mean the provision of Science, Technology and Innovation advice to multilateral negotiations and the implementation of the results of such negotiations at the national level. It therefore covers activities at the both international level and national level pursuant to international commitment. Advances in Science and Technology have become key drivers in international relations, and knowledge of trends in key fields is an essential prerequisite to

VOLUME 2 | SPECIAL ISSUE 20
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effective international negotiations. Knowledge of trends in Science, Technology and Innovation is also a key element for successful national implementation of international agreements. There are two key features of growth of Science, and Technology knowledge that are central to international negotiations. Firstly, scientific knowledge is becoming increasingly specialized and therefore demands greater expert input into international negotiations. Secondly, the application of Science and Technology to development requires the ability to integrate the divergent disciplines that are needed to solve specific problems. International Diplomacy now demands that the government negotiators deal with both specialisation and integration.

The main focus of the presentation would be on the continual lobbying and buy-in for realignment of Science and Technology in promoting SSC and Triangular Cooperation, as well as Foreign policies of developing nations, so as to be able to sustainably leap frog their economies through Science and Technology Diplomacy, and be able to achieve quick wins through initiatives in IPR, Commercialisation, exchange of information, capacity building and for technology sourcing and building of Science and Technology partnerships. Areas of leapfrogging development countries would be in emerging technologies of Nanotechnology, Biotechnology, and Indigenous knowledge system, Robotics, Mechatronics and Information Communication Technology. Finally a review of the current status of Science and Technology in various developing countries through identification of training needs and recommendation for suitable mechanisms of Triangular Cooperation trough sharing the capabilities and experiences of developing countries on Science and Technology Diplomacy would be of necessity.

***Keywords**: Science, Diplomacy, Science diplomacy, Technology, Innovation, Impacts, Opportunities and Challenges*

INTRODUCTION

Zimbabwe is located in southern Africa. According to Sibanda(2011), Zimbabwe has a land area of 390,759sq.km(150,873 sq.mi). From north to south its greatest distance is 760km (470mi), and from east to west it is 820km (510mi). The country's east is mountainous with Mount Nyangani as the highest point at 2,592m. About 20 per cent of the country consists of the low veld less than 900m. Victoria Falls, one of the world's biggest and most spectacular waterfalls, is located in the country's northwest as part of the Zambezi River. The country has a tropical climate

VOLUME 2 | SPECIAL ISSUE 20
ISSN 2181-1784
SJIF 2022: 5.947 | ASI Factor = 1.7

with a rainy season usually from late October to March. The climate is moderated by the altitude. Zimbabwe is faced with recurring droughts; and severe storms are rare.

The country borders Mozambique to east and Botswana to the west. South Africa is located to the south, and the Limpopo River forms the boundary between the two countries. In the north the border is formed by the Zambezi River, beyond which is Zambia. The map in figure 1 shows the location of Zimbabwe in Africa.

Zimbabwe has two major language dialects, Shona and Ndebele. Shona is the major dialect spoken by about three quarters of the Zimbabwean population which covers areas in the south, east and west of the country. The Ndebele occupy the western part of Zimbabwe.{7}

Figure 1: Location of Zimbabwe in Africa

Evolution of Science in Zimbabwe

Colonial Period

During the Rhodesian era, it was a time of low level technological transformation. Innovation and technologies wear geared to immediate requirements of agriculture and industry. The history of SETI (Science, engineering, technology and Innovation) in Zimbabwe dates back to 1967 when the Prime Minister of Rhodesia established Scientific Liaison Office in the Office of the Prime Ministry. The office was tasked with the duty of advising the Prime Minister on scientific matters. The Rhodesian government established the Rhodesian Iron and Steel Commission (RISC) Cotton Industry and Research Board and Industrial Development Commission with the purpose of stimulating ideas for management of the industrialised economy but there was no sign of technology development. During the UDI (Unilateral Declaration of Independence) era there was no explicit Science and Technology policy document.{ 5}

Post-colonial Period

VOLUME 2 | SPECIAL ISSUE 20
ISSN 2181-1784
SJIF 2022: 5.947 | ASI Factor = 1.7

It took close to 22 years for Zimbabwe to produce the 1st Science and Technology policy document. Challenges retarding the process included; lack of a strong policy community making it impossible to make well defined plans, the formulation process was continuously being shifted to different ministries thus delaying the process. The policy making process was also a bit complex due to lack of institutional coherence and synergism. Other factors delaying the process included lack of funds, lack of consultation, participative and inclusive approach. The 1st S&T policy was launched by His Excellency the President Comrade Robert Gabriel Mugabe in 2002, and subsequently followed in 2004 with the establishment of a Department of Science and Technology under the Office of the President and Cabinet. In the same year 2004, due to the intensive advocacy for funding of inventions ready for commercialisation by ZAI (Zimbabwean Association Inventors) which had been born a year earlier than the policy in 2001, an Innovation and Commercialisation Fund (ICF) was established. The Department of Science and Technology was promoted to full-fledged Ministry of Science and Technology Development in 2005 as implementation to Science and Technology Diplomacy influenced at regional level by the Southern African Development Community (SADC). The Science and Technology policy was reviewed in 2012 into a Science, Technology and Innovation (STI) Policy. The reviewed STI Policy of 2012 was in line with global Science and Technology trends, being crafted trough Technology and Innovation local, regional and global partners at very highest levels of SADC and UNESCO, as well as competent and highly skilled Zimbabwean Science and Technology human capital based in other countries. In summary the STI policy focuses on 6 main goals of: S&T capacity development; learning and utilizing emergent technologies in accelerating development; search for scientific solutions to global environmental challenges; mobilize resources and popularise S&T; and foster international collaboration in STI. {11}

Defining Science Diplomacy

The growing complexity of science and innovation systems and the interface with society have been accompanied by a more complex policy environment. This results in a need for better coordination and coherence at national level. One of the most crucial factors is the increasingly global nature of the issues with which national policy-makers are confronted. In a whole series of areas such as the environment, telecommunications, health, energy, education and intellectual property, it no longer makes much sense to construe problems in purely sectorial and national terms. In a

VOLUME 2 | SPECIAL ISSUE 20
ISSN 2181-1784
SJIF 2022: 5.947 | ASI Factor = 1.7

world that is becoming daily more interdependent, policy-making is inevitably assuming an increasingly transversal and global dimension. In this context, science, technology and innovation (STI) policy systems have emerged as interconnections between knowledge, values national and international socio-economic, environmental, technological and organizational components. {11}

Science diplomacy is the issue of scientific interactions among nations to address the common problems facing humanity and to build constructive, knowledge based international partnerships. (Dr Nina Federoff, Science and Technology Adviser to US Secretary of State) {8}or Generally speaking, science diplomacy is the use science, its methods, and its philosophies in diplomacy as an avenue for establishment new connections and strengthening existing ones. Science is yet another field that can broaden horizons and diversity the international dialog, handily lending itself to problem solving, logical discourse, and the ongoing pursuit of understanding that diplomacy currently espouses.

The British Royal Society and the American Association for the Advancement of Science (AAAS), describe three major facets of science diplomacy in 2010 journal focused on providing a concise definition for the term science diplomacy. Science in diplomacy, science for diplomacy, and diplomacy for science are the tree pillars that provide a basis for science diplomacy. Science in diplomacy entails science informing and advising foreign policy, ultimately providing a more unimpeachable body of support for any given objective. Science for diplomacy is the notion that science can be used as a diplomatic tool, trough the notion of soft power, to shape international dialogs and to create more channels of communication between communities. Finally, diplomacy for science consists of efforts to involve international actors in the pursuit of science. {6}

Perhaps most importantly is the maintenance of the philosophies in each word of the term. Science attempts to unravel the mysteries of the universe through reasoned approach, rigorous testing, and communal review and understanding. Diplomacy seeks to bridge the gaps between the world's communities, employing the pursuit of tolerance and understanding with the ultimate goal of resolving common differences. Science diplomacy primarily seeks to bring these two concepts together so that each individual aspect of their doctrines can enhance the other. {9}

Impact

Scientific values of rationality, transparency and universality are the same the world over. They can help to underpin good governance and build trust between

VOLUME 2 | SPECIAL ISSUE 20
ISSN 2181-1784
SJIF 2022: 5.947 | ASI Factor = 1.7

nations. Science provides a non-ideological environment for the participation and free exchange of ideas between people, regardless of cultural, national or religious backgrounds.

✹ Science is a source of what Joseph Nye, the former dean of the Kennedy School of Government at Harvard University, terms 'soft power' (Nye2004). The scientific community often works beyond national boundaries on problems of common interest, so is well placed to support emerging forms of diplomacy that require non-traditional alliances of nations, sectors and non-governmental organizations. If aligned with wider foreign policy goals, these channels of scientific exchange can contribute to coalition building and conflict resolution.

✹ Science diplomacy seeks to strengthen the symbiosis between the interests and motivations of the scientific and foreign policy communities. For the former, international cooperation is often driven by desire to access the best people, research facilities or new sources of funding. Human-induced global problems that confront us cannot be solved by any one individual, group, agency or nation. It will take a large collective effort to change the course that we are on; nothing less will suffice. Our planet is facing several mammoth challenges: to its atmosphere, to its resources, to its inhabitants. Wicked problems such as climate change, over-population, disease, and food, water and energy security require concerted efforts and worldwide collaboration to find and implement effective, ethical and sustainable solutions. Given the long-established global trade of scientific information and results, many important international links are ready in place at a scientific level. These links can lead to coalition-building, trust and cooperation on sensitive scientific issues which, when supported at a political level, can provide a 'soft politics' route to other policy dialogues. That is, if nations are already working together on global science issues, they may be more likely to be open to collaboration on other global issues such as trade and security. {10}

✹ One other impact of science diplomacy is hope. Linkages and collaborations within science sector have given great hope to communities (especially marginalised ones) of the world can be a better place. Science diplomacy has led to development of programmes which takes into cognisance of both developed and developing nations.

Achievements (Science Diplomacy in Action)

✹ Pugwash Conference on Science and World Affairs is one success story on science diplomacy. It brings together influential policy, public figures and scientists to seek ways to eliminate nuclear weapons and reduce threats of war. {3}

VOLUME 2 | SPECIAL ISSUE 20
ISSN 2181-1784
SJIF 2022: 5.947 | ASI Factor = 1.7

✹ SAFARI 2000,which from 1998 to 2003 brought together two hundred scientists across sixteen countries. It was a multinational environmental and remote-sensing field campaign that observed a broad range of phenomena related to land-atmosphere interactions and biogeochemical functioning across southern Africa. Its objective was to better understand how aerosol and trace gas emissions affect local and regional climate and ecosystems. The initiative traced atmosphere emissions from source to deposition and involved coordinated satellite, aircraft, and ground-based observations during intensive field campaigns and long-term monitoring at core ground sites across the southern African Development Community (SADC) region. Such regional networks create necessary and enabling conditions for favourable science diplomacy outcomes.

The Southern African Development Community (SADC) is an inter-governmental organization with a goal to further socio-economic cooperation and integration as well as political and security cooperation among 15 Southern African states of Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe and Madagascar (currently suspended after the coup) and is headquartered in Gaborone, Botswana. It complements the role of the African Union.

The Southern African Development Co-ordination Conference, SADCC, the forerunner of the Southern African Development Community (SADC) was established in April 1980 by governments of the nine Southern African countries of Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe. The SADCC was transformed into Southern African Development Community (SADC) on 17 August, 1992 and August17 is celebrated as SADC day every year.

The formation of SADC was the culmination of a long process of consultations by the leaders of Southern Africa with the broader objective of pursuing economic and social development in the region namely, Energy, Tourism, Environment and Land Management, Water, Mining, Employment and Labour, Culture, Information, Sports, Transport and Communications and to implement programmes and projects at the national and regional level and to secure international understanding and support. Other sectors are Finance and Investment, Human Resource Development, Food, Agriculture and Natural Resources, Legal Affairs and Health.

The 30th Summit of SADC Heads of State and Government to celebrate the 30th anniversary of SADC was held in Windhoek on August 17,2010 to take stock of

VOLUME 2 | SPECIAL ISSUE 20
ISSN 2181-1784
SJIF 2022: 5.947 | ASI Factor = 1.7

the achievements up to that time and to chart out a course for effective implementation of the decision taken and develop strategies for economic and social development of the SADC region. The 31st SADC Summit was held in Luanda, Angola in August,2011 and Chairmanship of SADC also passed from Namibia to Angola .The Summit was distinguished by two key developments: Angola's Chairmanship, a country whose foreign policy is often referred to as 'multi-vector', its diplomacy 'unconventional' and regional ambitions beyond oil exportation reticent; and South Africa chairing organ on Politics, Defence and Security Cooperation- the latter expected to recommend headways to the protracted deadlocks in Zimbabwe and Madagascar. The economic integration agenda was also discussed.

The importance of regional economic cooperation and integration as a means for accelerating and consolidating economic and social development has long been recognised by African decision-makers (Lebale et al, 2009). The Post-Independence era saw African governments embracing the idea of regional integration, initially mainly for political reasons and later as a development strategy to rise above challenges of small markets, landlockedness and to benefit from economies of scale in production and trade.

Today's globalised world, as well as Africa's risk of further maligilisation in multi-polar world dominated trade blocks in North America, Europe, South East Asia and China, have presented African regional economic integration as an imperative (Madyo, 2008). Lebale et al (2009) also states that regional integration could lead to, inter alia, pooling of resources and enlarged local markets for stimulating production, trade and investment. Second, with the current financial and economic crisis affecting African economies through decreases in Official Development Assistance (ODA), imports and investments, the intensification of intra-African trade offers one development strategy for trade diversification. World, as well as Africa‟s risk of further marginalization in a multi-polar world dominated by trading blocs in world, as well as Africa‟s risk of further marginalization in a multi-polar world dominated by trading blocs in

African States have entered into a number of regional integration agreements; and currently there is no country in Africa that is not a member of at least one regional economic group (Alemayehu and Haile, 2002).

Examples of regional integration arrangements currently in place in Africa include the East African Community (EAC) in East Africa, the Economic Community of West African States (ECOWAS) in West Africa, the Economic

VOLUME 2 | SPECIAL ISSUE 20
ISSN 2181-1784
SJIF 2022: 5.947 | ASI Factor = 1.7

Community of Central African States (ECCAS) in Central Africa, the Southern African Development Community (SADC) and the Common Market for Eastern and Southern Africa (COMESA) in Southern and Eastern Africa.

In addition to agreements at a regional level, attempts have also been underway to create economic cooperation (and ultimately meaningful economic integration) among African countries at a continental level (Alemayehu and Haile, 2004). According to Hatzernberg (2011), the aspiration of African leaders to integrate Africa, provided the rationale for the Lagos Plan of Action (LPA). The LPA was an initiative of the Organization of African Unity (OAU), adopted by Heads of State in April 1980. The plan aimed at increasing Africa‟s self-sufficiency and reducing dependency on the Western countries. The Abuja Treaty was signed in 1991and was the impetus for the African integration agenda. This treaty emphasized African solidarity, self-reliance and an endogenous development strategy through industrialisation. The treaty came into force in 1994 and envisaged the development of an African Economic Community by 2028.Leaders at the African Union (AU) Summit which took place in January 2012 under the theme „Boosting intra-African trade‟ endorsed a plan to set up a Continental Free Trade Area (CFTA) by 2017. The proposed CFTA would be a key component of the AU‟s strategy to boost trade within the region by at least 25-30 percent in the next decade (International Centre for Trade and Sustainable Development, 2012). There are serious efforts aimed at achieving regional integration in Africa, mainly with a view to alleviate poverty, generate employment, and improve per capita incomes and overall standard of living of African countries through boosting trade amongst African countries themselves. Despite such efforts, however, existing Regional Economic Communities (RECs) in Africa have not been successful in fully achieving their intended objectives.

Figure 2: Southern African Development Community (SADC)

VOLUME 2 | SPECIAL ISSUE 20
ISSN 2181-1784
SJIF 2022: 5.947 | ASI Factor = 1.7

Opportunities

- Development of new scientific partnership with other global partners
- address global challenges through international collaborations
- build research and education capacity in both developed and developing countries,
- extend communication networks to facilitate virtual research experimental and data sharing more broadly among the world's science and technology research communities,
- Inform policy makers through high-quality, interdisciplinary research.
- Trans-boundary issues and challenges or Governance of international spaces- International spaces beyond national jurisdictions- including, the high seas, the deep sea and outer space- cannot be managed through conventional models of governance and diplomacy, and will require flexible approaches to international cooperation, informed by the scientific evidence and underpinned by practical scientific partnerships. These issues not only present unique foreign policy challenges because of their proximate nature, but, given the strong domestic components, they have active and vocal domestic constituencies. These issues are often set in the context of the natural world, as reflected in the adage ''nature knows no boundaries'', Science diplomacy is not one of the most promising areas of innovation for how to deal with the great transnational challenges of this century, including nuclear disarmament, climate change, food security, disease and many other aspects of international peace building. {8}
- Science and Diplomacy can be a resource for foreign policy makers and analysts, scientists and research administrators, and educators and students in their effort to better bridge science and foreign affairs. Our goal is a foreign policy that can fully address the increasingly complex technical dimensions of twenty-first century international relations. {2}
- The formation of SADC was the culmination of a long process of consultations by the leaders of Southern Africa with the broader objective of pursuing economic and social development in the region namely, Energy, Tourism, Environment and Land Management, Water, Mining, Employment and Labour, Culture, Information, Sports, Transport and Communications and to implement programmes and projects at the national and regional level and to secure international understanding and support. Other sectors are Finance and Investment, Human

VOLUME 2 | SPECIAL ISSUE 20
ISSN 2181-1784
SJIF 2022: 5.947 | ASI Factor = 1.7

Resource Development, Food, Agriculture and Natural Resources, Legal Affairs and Health.

✹The Government of India signed the Memorandum of Understanding on economic cooperation with SADC on 14th Oct, 1997. Broadly areas of cooperation include: agriculture, water recourses management, human resources development, entrepreneurial development, promotion of small and medium scale industries, non – conventional energy sources, communications, and commerce, and Banking, diplomacy and enterprises development through private sector involvement.

As a follow up to the MOU signed in Oct 1997, the First India SADC Forum meeting was held in Windhoek on 28th April 2006. The Forum agreed to focus cooperation in the sectors of Trade, Industry, Finance and Investment; Food, Agriculture and pharmaceuticals: Water Resource Management; and Information and Communications Technology.

✹ Science, Technology and Innovation (STI) in the East African Community (EAC) are key drivers of economic and social progress. The experience of successful developing countries shows that STI policies that are properly integrated into national development strategies and combined with institutional and organisational changes can help raise productivity, improve global competitiveness, support enhanced economic growth and facilitate employment creation.

The Treaty for the Establishment of the East African Community (EAC) identifies the widening and deepening of co-operation among Partner States in Science, Technology and Innovation (STI) as a key objective of the Community. This is informed by the recognition of the fundamental importance of science and technology in economic development. In order to facilitate co-operation in the development of science and technology within the Community, the Partner States have agreed to:

a. Jointly establish and support scientific research and research institutions in the various disciplines of science and technology;

b. Create a conducive environment for the promotion of science and technology in the Community;

c. Encourage the use and development of indigenous science and technologies;

d. Mobilise technical and financial support from local and foreign sources and from international organisations or agencies for the development of science and technology in the Community;

VOLUME 2 | SPECIAL ISSUE 20
ISSN 2181-1784
SJIF 2022: 5.947 | ASI Factor = 1.7

e. Exchange scientific information, personnel and promote and publish research and scientific findings;

f. Collaborate in the training of personnel in the various scientific and technological disciplines at all levels using existing institutions and newly established ones;

g. Promote, develop and apply information technology and other new technologies throughout the Community;

h. Establish common ethical guidelines for research;

i. Harmonise policies on commercialisation of technologies and promotion and protection of intellectual property rights.

Co-operation in Science, Technology and Innovation has been further emphasised by other key documents of the Community. Article 42 of the Protocol on the Establishment of the East African Community Common Market commits the Partner States that make up the East African Community to the promotion of research and technological development through the implementation of market-led research, technological development and adaptation of technologies in the community. This is in order to facilitate the sustainable production of goods and services and enhance international competitiveness.

✹ The East African Science and Technology Commission (EASTECO) is semi-autonomous institution of the East African Community (EAC) that was established by the fifth Extra-Ordinary Summit of the EAC Heads of State on June 18, 2007. This was in accordance with the relevant provisions of the Treaty on the Establishment of the East African Community as set out in Chapter 16, Article 103 (a), where the Partner States undertook to promote co-operation in the development of science and technology within the Community's member states.

EASTECO's overall objective is to promote and coordinate the development, management and application of science and technology to support regional integration and socio-economic development. The specific objectives of the Commission include:

a) The formulation of regional Science, Technology and Innovation (STI) policies;

b) The joint development and application of science and technology;

c) The promotion of regional research centres of excellence;

d) The exchange and utilisation of scientific information;

VOLUME 2 | SPECIAL ISSUE 20
ISSN 2181-1784
SJIF 2022: 5.947 | ASI Factor = 1.7

e) Promotion of public and private sector partnership in the development and application of STI;

f) Mobilisation of resources for STI in the community;

g) Fostering scientific and technological innovation in the Partner States (seeding for future growth);

h) Development, adoption and utilisation of ICT and the adaptation of new and emerging technologies

i) Supporting the dissemination of research and development findings in the Partner States.

Challenges

✹ Regulatory barriers, such as visa restrictions and security controls, can also be a practical constraint to science diplomacy e.g. stringent visa requirement limit travelling opportunities for scientists and scholars.

✹ In Zimbabwe and other developing countries there is still need for a clearly defined system of innovation which shows linkage and a well-development. Absents of such a structure, affects and/ or delays decision making hence progress is affected and development is hindered.

✹ Sanction-smart/ economic sanctions also impact negatively on diplomatic relations across all sectors.

✹ Lack of financial resources-the dwindling government coffers have impacted negatively on all sectors of the economy especially projects which would require long periods of time and resources for them to bring results. Government support on science research and development has been close to none, leaving researchers to source funds through their own networks. Lack of treasury support divorces the researcher from the diplomats. This then reduces the chances of science influencing foreign policy.

✹ Political influence-Many developing countries have unpredictable/harsh political climates and this impact negatively in trying to pursue any form of diplomacy. Unstable political environment chases away potential investors.

✹ SADC countries face many social, development, economic, health, diplomatic, defence, security and political challenges. Some of these challenges cannot be tackled effectively by individual members. Cattle disease and organized Gangs know no boundaries. War in one country can suck in its neighbours and damage their economies. The sustainable development that trade could bring is threatened by the existence of different product standards and tariff regime, weak

VOLUME 2 | SPECIAL ISSUE 20
ISSN 2181-1784
SJIF 2022: 5.947 | ASI Factor = 1.7

customs infrastructure and bad roads. To achieve this, in 2008, the SADC agreed to establish a free trade zone with the East African Community (EAC=formed in 1999, the EAC consists of Burundi, Kenya, Rwanda, Tanzania, South Sudan and Uganda. It is the leading regional economic organization and it promotes broad-based growth and integration) and the Common Market of Eastern and Southern Africa (COMESA= comprises 19 African member states with the mission to "endeavour to achieve sustainable economic and social progress particularly in trade, customs and monetary affairs, transport, communication, information and technology, industry and energy, gender, agriculture, environment and natural resources.") including all members of each of organization.

Since 2000 began the formation of SADC Free Trade area with the participation of SACU countries (South Africa, Botswana, Lesotho, Namibia and Swaziland) and total number of countries joining are 12 except Angola, DR Congo and Seychelles.

Figure 3: East African Community (EAC)

✹ Brain drain- as most of the knowledgeable human resources is going for greener pastures, they leave vacuums in their own countries (Zimbabwe is not the exception). These vacuums mean less expertise to take charge of the science diplomacy process.

✹ Fear for technology-some of our political leaders fear science to extent they do not support research or absorption of emerging technologies as and when they come. If this is the case it means diplomacy in science related matters legs behind.

✹ Misinformation-most policy makers or diplomats are misinformed or lack the correct knowledge in science and technology such that they would not support it. (Issues related to biotechnology or use of ICTs).

✹ Inadequate science and technology infrastructure

VOLUME 2 | SPECIAL ISSUE 20
ISSN 2181-1784
SJIF 2022: 5.947 | ASI Factor = 1.7

✹ Science and technology issues are largely alien to, and most invisible within most multilateral institutions. Science and Technology, on one hand, and international policy, on the other hand are effectively two solitudes, existing in separate, floating worlds which rarely intersect. When diplomats or politicians talk about international policy, you rarely hear anything about S&T, and vice versa.

✹ Development problems are increasingly complex. It is essential to innovate and adapt technologies to resolve these problems, but successful tests of innovative solutions often fall short of expectations when made available to a larger population.

RECOMMENDATIONS

✹ Science diplomacy in Africa needs support and encouragement at all levels of the science community. Younger scientist needs opportunities and career incentives to engage with policy debates from the earliest stage of their careers. There is much to learn from related debates over science communication and policy engagement by scientists, where there has been a culture change within science over the past ten years.

✹ Establishment of scientific liaison desk at all embassies so as to have an in-depth understanding of the policies, people and priorities of their host nation and create opportunities for scientists, universities and high-tech firms at home,

✹ Most of developing countries lack of science culture –there is need to demystify science and make it integral part of every individual in the community. In pursuit of a knowledge economy; all communities must be scientifically empowered. A lot of awareness is needed on the importance of science and technology in communities.

✹ Develop a science diplomacy policy-whose main objectives should be:

✹ Negotiating the participation of scientists in international research programmes;

✹ Providing scientific advice to international policymaking;

✹ Helping to build science capacity in developing countries and

✹ Using science to project power on the international stage, in ways that increasing prestige and attract inward investment.

CONCLUSION

Together, science and diplomacy have enabled the human race to delve deeply into the nature of the world around us, to reach across borders and nationalities, and perhaps most importantly to delve deeply into ourselves. Science and technology

VOLUME 2 | SPECIAL ISSUE 20
ISSN 2181-1784
SJIF 2022: 5.947 | ASI Factor = 1.7

diplomacy is very vital because it liberates scientific and technological knowledge from its rigid national and institutional enclosures and to unleash its progressive potential through collaboration and sharing with interested partners' world-wide.

Through science diplomacy, we can over overcome any obstacle, bridge any chasm, and solve any problem. Through science diplomacy, we can take the next step forward in our own betterment. Through science diplomacy, we can truly make a difference.

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VOLUME 2 | SPECIAL ISSUE 20
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