Research Article

Science Advisory to Governments and Regional/Sub-Regional Organizations in West and Central Africa

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Abstract

Science advice to governments and regional and sub-regional organizations in West and Central Africa has been reviewed. The objectives were to analyze its evolution and characterize the sources of advice. During the colonial period, it was by the colonial administrations and for their needs. At independence, in general, the new nations (particularly French speaking) entered into agreements with the former colonial powers to develop science, technology and innovation capacity for sustainable development. English speaking nations sought more partners outside the colonial experience. Colonial research institutes were increasingly transformed into national research institutes/institutions with national development mandates. Governments increasingly turned to science advice from consultants, inter-ministerial committees, advisory bodies, ad hoc experts' groups, or a combination of these. Regional/sub-regional organizations sought advice from consultants, ad hoc technical experts' groups, advisory bodies or a combination of these. Increasingly, science advice is delivered by Africans. Science advice by science academies is most rigorous. The arrival of more science academies, with varying links with governments, indicates that evidence-based science advice is growing in the region.

Key words: Science Advice, Governments, Regional Organizations, West Africa, Central Africa

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Résumé

Les conseils scientifiques aux gouvernements et aux organisations régionales et sous-régionales de l'Afrique de l'Ouest et du Centre ont été examinés. Les objectifs étaient de présenter une analyse de son évolution et une caractérisation des sources d'avis. Pendant la période coloniale, il a été donné par les administrations coloniales et pour leurs besoins. A l'indépendance, les nouvelles nations (particulièrement Francophones), en générale, ont conclu des accords avec les anciennes puissances coloniales pour développer la science, la technologie et la capacité d'innovation pour un développement durable. Les nations Anglophones ont choisi les partenaires hors de l'expérience coloniale. Les instituts de recherche coloniaux ont été de plus en plus transformés en instituts/institutions de recherche nationaux avec des mandats de développement national. Les gouvernements se sont de plus en plus tournés vers les conseils scientifiques de consultants, de comités interministériels, d'organes consultatifs et de groupes d'experts ad hoc. Les organisations régionales/sous-régionales ont demandé l'avis de consultants, de groupes d'experts techniques ad hoc, d'organes consultatifs ou d'une combinaison de ces derniers. De plus en plus, les avis scientifiques sont fournis par des Africains. Les avis scientifiques fournis par les académies des sciences sont les plus rigoureux. L'arrivée dans la région d'un plus grand nombre d'académies des

sciences, ayant des liens variables avec le gouvernement, indique que les avis scientifiques fondés sur des preuves se multiplient dans la région.
Mots clés : Conseil Scientifique, Gouvernements, Organisations Régionales, Afrique de L'Ouest, Afrique Centrale

1. Introduction

Science advice may be defined as 'recommendation for a decision, course of conduct, or action based on the state of knowledge obtained and tested through scientific methods. This can come from experts or groups of experts/institutions from within or out of a given country. African countries needed science advice during pre-independence and post-independence periods for sustainable socio-economic development. Cameroon (bilingual: English and French) and Nigeria are used here, relative to Ghana, to reflect the trends in French speaking and English-speaking countries of the region.

2.Objectives

The general objective of this report is to present a historical evolution and analysis of science advice as a tool of sustainable development in West and Central Africa.

Specific objectives include:

a. To characterize science advice in the region, and

b. To encourage evidence – based policy formulation and use by policy/decision makers in the region.

3.Methods

To carry out the objective of the study, a review of literature on policy development in science, technology and innovation in the region during colonial and post colonial periods was done. The literature sought included publications (journal articles, books) and consultancy reports, mandates of ministries and institutes in charge of science and technology sought from websites and sources of advice to governments and regional organizations.

4.1 Pre-independence period: *Nya-*

Ngatchou (1982) and Isoun and Isoun (2013) stated that during the colonial period, the economies of Cameroon and Nigeria were managed by the colonial administrations. Hence, the necessary science advice came from the colonial powers. From science and technology activities in the field during the period, it is evident that the advice concerned agricultural production and industrialization according to the needs of the colonial administrations. Hence, France and Britain established agricultural research institutes in the colonies (Nya-Ngatchou, 1982; Nzietchueng, 2018; Isoun and Isoun, 2013). These include those inherited from the investments by the earlier German colonization that concerned only export crops.

4.2 Post-independence period: The colonial legacy was that 'Nigeria and, indeed, other African countries, their communities and their people were condemned as being too backward, disorganized, and undisciplined to use science and technology and innovation to be able to give the necessary value-added to raw materials or for industrialization in general. Nigeria and the other African nations were therefore declared to be not ready to utilize science and technology for development' (Isoun and Isoun, 2013).

"*Pour construire l'économie de la jeune nation, les premiers dirigeants fut aidés par leur partenaires (Britannique et Français) dans l'élaboration des stratégies à mettre en œuvre par le biais des plans quinquennaux. Après la seconde guerre mondiale, les Britannique et les Français avaient décidé que l'aide à leurs territoires coloniaux serait fournie dans le cadre de plans de développement élaborés pour*

chaque territoire par le gouvernement local avec l'aide de Londres pour les colonies Britanniques et de Paris pour les colonies française (Nzietchueng, 2018, citingKamark A. (1968) (le développement économique en Afrique. Ed. Tendence Actuelles)".(To construct the economy of the new nation, the first leaders were aided by their partners (British and French) in the elaboration of the strategies to be implemented through five year development plans. After the second world war, the British and the French decided that assistance to their colonial territories shall be given in the framework of development plans developed for each territory by local government with the aid of London for British territories and Paris for French territories.)

The need for scientific research (and related advice) was very evident immediately after independence. An effort was made in creating structures for research and advice.

In 1957, Ghana achieved independence under President Kwame Nkrumah, set the tone with a "science for development" policy characterized by coherent policy for universities and tertiary institutions "as engines for economic development". This was immediately after independence and aimed at indigenous innovation and development. There was convergence of science and industrial policy (Amankah-Amoah, 2016).

In the legislative assembly in March 1957, President Nkrumah said "…. I believe that one of the most important services which Ghana can perform for Africa is to devise a system of education based at its university level on concrete studies of the problems of the tropical world. The University will be the coordinating body for education research…. associated with Research Institutes dealing with agriculture, technology, and the physical and chemical sciences which we hope to establish" (Amankwah-Amoah, 2016).

In 1958, the Science Act 21 was enacted, and the National Research Council (Chaired by the President) charged with organizing and coordinating scientific research "geared towards policy formulation and delivering fast industrialization" and the University of Science and Technology (now Kwame Nkrumah University of Science and Technology) were founded. Importantly, the Ghana Academy of Sciences was founded in 1959.and its role was reinforced during the "new dawn" (Amankwah-Amoah, 2016).

Kwame Nkrumah was pushed out by a coup d'état in 1966 leading to a period of divergence of science and industrial policy and socio-economic decline coupled with the flight of expertise between 1967 and1979 (Amankwah-Amoah, 2016). The "new dawn" (2000 to date) arrived with civilian governments, This is characterized by policy development in collaboration with multiple partners, the launching of first National Science and Technology Policy(2012), the refocusing on development of indigenous capacity, the "positioning of the Ghana Academy of Arts and Sciences and the Centre for Scientific and Industrial Research as the central pillar in public policy formulation, ,the creation of the first technology park, the national commitment to science and technology as reaffirmed in the growth and poverty reduction strategy, and greater public-private partnership(funding, incentives) involving the diaspora among others(Amankwah-Amoah, 2016).

In 1962, the Federal Republic of Cameroon established a Scientific and Applied Research Council (under the Vice President). Among other attributes of the Council were prioritization / approval of research programmes, coordination of national research institutions and foreign/ international research organizations as well as

advice regarding international conferences where Cameroon was to participate.

At the opening of the meeting of the Council in 1964, the Head of State, President Ahidjo, said "*La recherche scientifique et appliquée est la clé de la promotion humaine, par le prodigieux essor économique et social qu'elle permet dans le siècle ou nous vivons. Les résultats remarquables enregistrés dans tous les domaines de la vie contemporaine sont le fruit du travail acharné des générations de chercheurs de toutes les nations qui ont apporté patiemment leur contribution au progrès de la science"* (Nzietchueng, 2018).(Scientifuc and applied research is the key for human development through economic and social improvement during the century we are in. Remarkable results in all domaines of contemporary efforts are fruits of dedicated work by generations of researchers of all nations which have patiently contributed to the progress of science).

In 1965, the National Office for Scientific and Technical Research (ONAREST) was created to conceive the scientific policy of the country. Among its five objectives were:

a) to orient, coordinate and control research activity throughout Cameroon, and

b) to liase on behalf of Cameroon with foreign/international research organizations.

Given the lack of specialized nationals to carry out the policy envisaged for ONAREST,the government signed with France, "*Une convention générale de coopération en matière de Recherche Scientifique et Technologique*" followed by particular conventions in 1964-65 with 12 French research institutes and organizations, many of whom were also present in French speaking Africa.

In 1974, a National Council for Higher Education and Scientific and Technical Research was established. The results of its first conference that took place in the same year included nine themes, 4 of which were on scientific and technical research. There were recommendations at the level of promotion of scientific activities including one on a science academy ("*Qu'I l soit envisagé, dans un avenir approprié, la creation d'une Académie Nationale des Sciences*").(That it be foreseen the creation of a National Academy of Sciences).

Operationalization of ONAREST required revision of the Franco-Cameroon agreement in 1974, leading to 9 research institutes. Efficiency dictated another reorganization in 1976 (decentralization) (4 institutes and 1 on agricultural machinery).

In 1979, ONAREST was transformed into the General Delegation for Scientific and Technical Research (DGRST) to conceive, orient government policy and implement government science and technology policy.

Specialized French research institutes had to aid in elaboration and realization of programme options and contribute to specialized training in French Universities. The 9 institutes of ONAREST were regrouped into 5 (Institute of Agronomic Research (IRA);Institute of Medical and Medicinal Plants Studies (IMPM); Institute of Geological and Mining Research(IRGM); Institute of Animal and Veterinary Research(IRZV) ; and Institute of Human Sciences (ISH)).

It took Nigeria about 10 years post-independence to have a "semblance of institutional structure for internal development of science and technology" (Isoun andIsoun, 2013). A formal science and technology policy was put up in 1986 (Isoun andIsoun, 2013).

In 2001, a National Economic Development Strategy (NEEDS) was developed with four

objectives, one of which was "science and technology being the engine of economic development and innovation". The greatest weakness of NEEDS was "near absence of inputs of science and technology" because economic planners treated it with benign neglect (Isoun and Isoun, 2013). *The result was failure of micro-economic indices, lack of innovation and ineffective industrial production (Isoun and Isoun, 2013*). "Our economic planners fell into the trap designed by some of our foreign expert detractors that convinced Nigeria and indeed other African Nations that they were not ready for cutting edge knowledge and tools of science and technology - they werecaught in the trap of convincing us that "we must learn to walk before learning to run" (Isoun and Isoun, 2013).

President Obasanjo came up with an innovative idea : Honorary Presidential Advisory Council on Science and Technology whose membership was composed of :

- Prof. Mohammed Hassan, President of African Academy of Sciences (AAS), Chair
- Prof. Thomas Odhiambo, Honorary President of AAS
- Prof. G.O.P. Obasi, Director General of World Meteorological Organization
- Prof. Alexander E.O. Animalu, President of Nigerian Academy of Sciences
- Dr. Balkuma, Principal Scientist, Hindustani Lever Research Centre
- Prof. T.T. Isoun, Fellow of AAS and Minister for Science and Technology
- Prof. P. Griffiths, Princeton University
- Prof. Lydia Makubu, Vice Chancellor, University of Swaziland

The Council had the mandate to advise the President on:

- Purposeful and effective ways of promoting science and technology in Nigeria,
- Science and technology as an instrument for cooperation and integration in Africa.

At the inauguration of the Council, the President said "Nigeria, under this democratic dispensation, is committed to creating an integrated and self-sustaining economy. Science and technology-based policies of government are geared towards achieving this goal (IsounandIsoun, 2013). The President said further that Nigeria was "actively involved in bilateral and multilateral initiatives and cooperation in Science and Technology, as well as pursuing collaborative research and development activities with international agencies, local and foreign research and development organizations and donor agencies".

5 Types of Science Advice

Science advice, as defined above, exists in many forms/categories. The forms/categories include sources/deliverers of advice: individual consultants, institute/university as consultants, consultancy groups/associations/fora, advisory councils/bodies, ad hoc technical expert groups and advisers (ministerial level), etc, and science academies. All these forms/categories differ in structural and delivery mechanisms. What follows is an attempt to treat them by characterizing their structural and delivery mechanisms as quality/ rigour indicators of the advice.

6 Legal Status of Deliverers of Science Advice

The legal status of each science advice type is important for the beneficiary/demander of the advice. Individual consultants and consultancy firms/groups may exist under laws/decrees governing non-governmental organizations while research institutes and universities may exist under executive orders/laws. Science academies may exist under laws/decrees governing learned

societies. Science academies in the region exist mainly under regulations governing learned societies while others exist under laws or decrees. Stronger links, without losing their independence, with governments is important for science academies to effectively carry out their visions/ missions.

Advisory bodies and ad hoc technical expert groups were created by regional/sub-regional organizations to work with consultants as may be necessary.

7 Science Advice to Government

Science advice to government can target the following direct beneficiaries/demanders: Presidential level, Head of Government level, Ministerial level, parastatal (under the ministry) level.

7.1 Presidential level: At the highest level of government, adviser(s) with specific or general mandate may exist to inform the hierarchy as may be required/assigned. Some countries have advisory councils at this level. In West Africa, Nigeria has an "Honorary Presidential Advisory Council (Isoun and Isoun, 2013). The composition of this Council (indicated above) is important and revealing. The individual advisers/ special advisers as well as the Council hadthe potential of great influence on government policy and, therefore, should be chosen with great care.

In Cameroon and Senegal, Economic and Social Councils (CESC, SESC) exist. Their advice is sought by the Head of State in general and may extend to Parliament and Government (CESC, SESC: accessed 18/10/23). While areas of advice are more specific in Senegal, they are less so for Cameroon .Given the nature of the Economic and Social Councils, their advice may or may not be evidence-based. Where the Head of Government is different from the Head of State, special advisers/advisers are appointed. It must be emphasized that they must be experts in science and technology (or are able to seek information critical for the advice) as important input for sustainable development. Otherwise, economic planners will give it "benign neglect"('Isoun and Isoun, 2013).

7.2. Ministerial level: At the ministerial level, advisers of several categories/grades exist (advisers in the Cabinet, Inspectorate General, and Permanent/General Secretariat and Research Institutes/Universities). Each of these has a mandate in policy development and implementation. The Minister in charge of Science, Technology and Innovation (STI) usually is the Government's advise ron STI matters. But the Minister's advisers are contributors from the Cabinet, General Inspectorate, Permanent/ General Secretariat and Research Institutes/ Universities as may be determined by the Minister. The advisory document is usually a write-up by the chosen adviser. For the document to be of high value, it must be substantiated. Hence, the adviser must be expert enough to access necessary information.

At the second level of the Ministry i/c STI or any other Ministry, the Minister may decide to use consultants outside the Ministry: individuals on their own merit, or study group/firm(s)/ institute(s) at national/international level. Three examples from the Republic of Cameroon include a consultancy requested by the Ministry of Livestock, Fisheries and Animal Industries (MINEPIA) (Mbah, 2008), a consultancy requested by the Ministry of Scientific Research and Innovation (MINRESI) and a consultancy on contingency plans with emergency response exercises requested by the Ministry of Environment, Nature Protection and Sustainable Development(MINEPDED). The above examples reflect the differences in structure and delivery.

a) Genetic, Breeding and Management Programmes: The Smallholder Dairy Development Project – Northwest and Adamaoua Components(MINEPIA, 2008).

Requested by MINEPIA

Objective: General- to elaborate a scientific document … a guide for genetic improvement of cattle for dairy production ... for sustainable production, the resulting genotypes must be in consonance with their environment. There were 12 specific objectives.

1.There was a scientific committee – composed of MINEPIA officials – to validate the report at a meeting.

2. The way forward: a mating plan

3. Recommandations.

b) Study on the Economy of Research in Cameroon Ministry of Scientific Research and Innovation(MINRESI, 2014)

Requested by MINRESI

Objective: General – "to contribute to optimizing the tools and actions of scientific research in the service of economic development of Cameroon, to enable Cameroon research to contribute to position Cameroon as an emergent economy by 2035". The specific objective was "to have all the elements necessary for setting up scientific research and technological policy in the service of the country".

Deliverables :

- Diagnosis of issues: 8
- Proposals for improvements: 6
- Final recommendations

Consultant : Centre International de Recherche Agricole pour le Développement (CIRAD) : 3 experts on mission.

7 French experts

9 Cameroonian experts.

Note: Final delivery of study?

Review input process?

However, a 'restitution'/'suivi' team is acknowledged.

In it's final comment the "*Mission" stated that "La mission souhaite que la présente étude alimente la rédaction de ce document et de ses déclinaisons sur la valorisation et l'innovation. Volontairement, nous avons choisi de ne pas prendre en compte les versions qui nous ont été fournies afin de préserver notre méthode de travail et permettre d'exprimer notre créativité. Cette étude permet donc aux rédacteurs du document stratégique de s'inspirer de nos travaux".The strategydocument referred to here is the National Science and Technology Policy (The mission wishes that the present study feeds the production of this document and its orientations on the valorisation and innovation. Willingly, in order to retain our working method and our creativity, we have chosen not to consider versions which were given to us .This study therefore permits the process of the strategy document to be inspired by our work.)*

c) Contingency Plans (CP) with Emergency Response Exercises for Biological Invasions in Cameroon: Ministry of Environment, Nature Protection and Sustainable Development (MINEPDED, 2016).

- Requested by MINEPDED.
- Consultants : 2 (National 1, International 1).
- Objective: to produce a manual that

(a) outlines a systematic risk-based contingency planning process to ensure a timely, efficient and objective and effective response to newly introduced species incursions, and

(b) to formulate emergency response exercises that will help ensure that responsible organizations have the capacity to respond to newly

introduced species incursions that are unpredictable in time and space.

- Outputs: manual as above and PowerPoint presentation on the manual.
- Delivery: task team composed of sectoral ministries and 2 technical advisers (1 National, 1 International).
- 2 meetings by task team (first for presentation of inputs and second for validation of final report).

Comment: note the differences in structure, delivery, and validation of consultancy reports. Quality control of the consultancy report on contingency plans was highest among the 3.

7.3. Science Academy Level: Science advice by a national academy of science(s) is triggered by request from beneficiary or foresight of the academy. The National Academy may exist under a law governing learned societies, government decree or law/bill. Such links with government determine the potential for the academy to offer advice to policy/decision makers at the public and government levels.

The concept of evidence-based science advice by African Academies of Sciences was developed during the second annual conference of African Science Academy Development Initiative (ASADI) in Yaounde , Cameroon Academy of Sciences(CAS)CAS, 2007).

Four West and Central African National Science Academies (Cameroon Academy of Sciences, CAS; Ghana Academy of Arts and Science, GAAS; Nigerian Academy of Science, NAS; and Senegalese National Academy of Science and Technology,ANSTS participated in developing the concept. The concept was given further considerable treatment during annual meetings (Chumbow, 2008; Mbah, 2008, 2011) and Mbah (2009, 2015). Today, about 10 National Science Academies exist in the region. Their presence is an indication that evidence – based science advice will have more influence on policy formulation in the region.

The virtue of science academy advice comes from 4 major pillars (Mbah *et al.,* 2019*). Such pillars include core values, design of study/activity within the niche of the academy, quality and diversity of experts involved in the study/activity, absence of conflict of interest, process of delivery (usually study/report review, overview*). The level of confidence/acceptance that the study/report commands depends on these pillars (Mbah*et al.,* 2019). Given this, science academy advice, in general, differs from that of advisory bodies treated above by being strictly evidence-based, independent, respect of the academy core values, broad-based while that of other bodies is usually limited within their narrow mandates. The advice by inter-ministerial committees (used by many governments) is weak given that the composition of committees may not be determined by expertise but by administrative position/political affiliation. Participation of members at times is characterized by defense of ministerial positions rather the facts presented.

The resulting report is, therefore ,not a product of a rigorous process. Consequently, other ministries/governments may reject in various ways the report. It would, thus, be advisable that governments turn to science academies for advice if general ministerial and public acceptance on difficult/controversial issues is desired (Mbah *et al.,* 2019).

Evidence-based consensus studies and workshop reports from four science academies in West and Central Africa reported by the InterAcademy Council IAC)(IAC, 2014) are presented below as examples of academy advice.

Cameroon:

- Recent Advances in Onchocerciasis Research and Implications for Control (CAS, 2013; IAC, 2015).

- Elements for a National Biotechnology Policy Framework for Cameroon (CAS, 2015).

Ghana:

- Education for National Development: Proceedings of 2013 Founder's Week Celebrations (GAAS, 2019)

- Harnessing Science for Development of Medicines: Challenges for Ghana in the Global Matrix(GAAS, 2015)

Nigeria:

- Accreditation Report of Research and Development Agencies of the Federal Science and Technology Ministry (NAS, 2011)

- Reducing Maternal and Peri-natal Mortality in Nigeria. A needs assessment study (NAS, 2012).

Senegal:

- Les AvanceesRecentes dans les Methode Spectroscopiques : Applications dans l'Industireie et L'Agriculture(ANSTS, 2020)(Recent Advances in Spectroscopic Methods : Applications in Industry and Agriculture(ANSTS 2020))

- Le Foncier au Senegal : Etat des Lieux et Perspectives pour la Modernisation de l'Agriculture(ANSTS, 2017)(Land Issues in Senegal : State and Perspectives for Modernisation of Agriculture(ANSTS 2017)

A closer look at these studies, reports and proceedings indicates that the Academies differ in their approaches to evidence – based science advice. In particular, the convening activities are not the same.

8 Science Advice to Sub-regional and Regional Organizations

Science advice to sub- regional and regional organizations would imply advice to the Economic Community of West African States (ECOWAS), Economic Community of Central African States (ECCAS), the Forum for Agricultural Research in Africa(FARA) and the United Nations Economic Commission for Africa (UN-ECA). Such science advice would relate to an issue of common interest to member states of a given community. To whom do these organizations go to for science advice today? They turn to African and non-African scientists. scientists/experts in groups such as Advisory Bodies, Ad Hoc Technical Experts Groups. The UN – ECA created an Advisory Body on Science and Technology(D. A. Mbah, one of the authors this report was a member).

The following examples come from the Forum for Agricultural \Research in Africa (FARA) and the United Nations – Economic Commission for Africa(UN – ECA):

Again, like in the case of advice to governments, the examples will be characterized as regards trigger(s), structure, and delivery mechanisms.

8.1. The United Nations Economic Commission for Africa (UN-ECA)

Consultancy: Implementation of Development Account Project on Sustainable Modernization of Agriculture and Rural Transformation (SMART): Studies on SMART potential and readiness in Africa.

Objective: Overall objective is to highlight the prospects for achieving a Sustainable Modernization of Agriculture and Rural Transformation or Green Revolution in African countries, with a view to enhancing the knowledge of these countries for making informed policy, strategy and programme-related decisions regarding agricultural transformation.

Specific tasks and deliverables

- Identification/selection or development of indicators of SMART in Central, Western and Southern Africa.
- Assessment of the potential and readiness to achieve SMART in Central, Western and Southern Africa.
- Preparation of draft report on findings
- Presentation of draft report to the review meeting (expert group meeting)
- Finalization of report
- Scope and strategy study to include 5 agro-ecological zones in each sub-region. Identification of past successful stories or green revolution best practices.
- Consultants under direct supervision of ECA's sub-regional focal points for SMART DA project and under coordination of project coordinator
- Consultants: 3(1 per sub-region).
- For each sub-region, 2 countries were selected:
  - Central Africa: 2 countries
  - Western Africa: 2 countries
  - SouthernAfrica: 2 countries
- D. A. Mbah was the consultant for Central Africa. He produced the following reports:
  - "The Potential and Readiness to Achieve Sustainable Modernization of Agriculture and Rural Transformation (Green Revolution) in Central Africa: Republic of Cameroon"
  - "The Potential and Readiness to Achieve Sustainable Modernization of Agriculture and Rural Transformation (SMART) (Green Revolution) in Central Africa : Democratic Republic of Congo"

These reports were presented at an expert group meeting in December 2008 (ECA press release No 49/2008).The UN-ECA, together with the United Nations Project Office (UNPOG), organized the meeting. Thereafter, the UN-ECA and UNPOG were "to finalize the project proposal and mobilize resources for its implementation using a partnership approach very much as the Korean Development Model. Subsequently, the consultants delivered SMART lectures on the best practices that were part of the consultancy. The lectures were in Pretoria (South Africa), Ibadan (Nigeria) and Yaoundé (Cameroon).

The ECA Advisory Body on Science and Technology(D. A. Mbah was member and focal point for Central Africa) had the mandate to advise on policy and programmes/projects as well as review consultancy reports for publication(UN – ECA. 1998; UN – ECA, 2000).

8.2. Forum for Agriculture Research in Africa (FARA)

Consultancy: A Study to Identify Priority Areas of Investments and Framework and Guidelines for National Agricultural Research Institute, within Rwanda Agriculture Board – Research(NARI (RAB - R)): Contribution to Country Comprehensive Africa Agriculture Programme (CAADP) Process in Central Africa: Republic of Rwanda.

Objectives: The objectives were to identify priority areas of investments required for Rwanda Agriculture Board-Research (RAB-R) to contribute to the country's CAADP process and to develop a framework and guidelines for RAB-R reform.

Scope and strategy: "As indicated in the CAADP Pillar IV (Agricultural Research) Strategy and Operational Plan 2009-2012.

Outputs and deliverables:

i.Inception report articulating the methodology, survey instrument and how it will be used.

ii. Draft report that responds to tasks in the terms of reference.

iii. Presentation of findings highlighting priority areas of investment, framework for investment,

guidelines for investment, and how to apply the framework and the guidelines.
iv. Reporting: Executive Director of FARA through the Director of Advocacy and Policy (FARA).

A similar study: "A Study to Identify Priority Areas of Investments and Framework and Guidelines for NARI (INERA)'s contribution to country CAADP process in Central Africa: Democratic Republic of Congo was also made. D. A. Mbah produced the reports.

It is important to note that Pillar IV of the Comprehensive Africa Agriculture Development Programme (CAADP)of the AU on Agricultural Research has FARA as lead institution. Hence, the study was eventually for the attention of the African Union Member States in the Central Africa Region.
There were similar studies for 2 countries in West Africa(1 consultant) and 2 in East Africa(1 consultant).
It is noted that the Food and Agriculture Organization(FAO) and the World Health Organization(WHO) are present in West and Central Africa. However, their efforts in science advice come through their headquarters in Rome, Italy and Geneva, Switzerland, respectively. Ad Hoc Technical Experts Groups together with individual consultants are their major source of science advice. D. A. Mbah participated in some of the work of the ad hoc groups(FAO, Convention on Biological Diversity(CBD)).

9 Responses to Science Advice

While information on responses of those who were targeted as beneficiaries of the advice is not easily available even from authors of the said advice, it is possible that responses can be either of written, action/decision taken, and policy/ programme change. Science academies, given their nature, can monitor responses. The Cameroon Academy of Sciences received positive/favourable responses in various ways (Mbah et al., 2019).

10. Challenges of Science Advice Science advisers may face several challenges among which are:

i. Targeted policy/decision maker may reject the advice if it is not properly packaged, or it is not in favour of his/her political interest. In this case, a decision may be taken contrary to evidence,
ii. Pressure to include in the report what is wished by the decision maker, not what evidence dictates, and,
iii. Pressure for kick-backs.

11. Conclusion

Today, science advice in West and Central Africa comes from multiple sources whether at the level of government or regional/sub-regional organization. Advice from science academies is most rigorous and mainly directed at policymakers at the level of governments. Regional/sub-regional organizations seek advice from a combination of consultants, advisory bodies and ad hoc technical expert groups. There is potential that evidence – based science advice will grow in the region.

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