

Scientific Evidence – based Response to Pandemics in Resource Limited Countries with Particular Reference to the COVID 19: The Case of Cameroon

Evidence – based Science Advice

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Abstract

Evidence – based science advice, advice by scientists/researchers to policy makers to inform policy formulation, may be technocratic, decisionist or pragmatic. The Cameroon Academy of Sciences uses the pragmatic approach in delivering advice. Its advice is characterized by its core values, niche, quality and diversity of experts, absence of conflict of interest and rigorous delivery process. CAS uses six approaches in delivery of advice: consensus studies, workshops, statements, journal article summaries, public lectures and participation on sectoral committees. Engagement on advice is triggered by sectoral request or Academy foresight.

Key words : Evidence, Science Advice

Résumé

Les conseils scientifiques fondés sur des données probantes, les conseils des scientifiques/chercheurs aux décideurs politiques pour éclairer la formulation des politiques, peuvent être technocratiques, décisionnels ou pragmatiques. L'Académie des Sciences du Cameroun utilise l'approche pragmatique dans la prestation de conseils. Ses conseils se caractérisent par ses valeurs fondamentales, son créneau, la qualité et la diversité des experts, l'absence de conflit d'intérêts et un processus de livraison rigoureux. CAS utilise six approches dans la prestation de conseils : études consensuelles, ateliers, déclarations, résumés d'articles de revues, conférences publiques et participation à des comités sectoriels. L'engagement sur les conseils est déclenché par une demande sectorielle ou la prévoyance de l'Académie.

Mots clés : Evidence, Conseil Scientifique

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Introduction

“Science is critical to narrowing the gap between developed and developing countries.... This is why we have established the Rwanda Academy of Science to promote and support the role of science in sustainable development and to provide evidence – based solutions to leaders at all levels” (President Paul Kagame, 2016).

Science advice may be defined as **“recommendation for a decision/course of conduct/action based on the state of knowledge obtained and tested through scientific methods”** (Mbah and Guewo-Foleng, 2021). It is also defined as **“the process, structures and institutions through which governments and decision-makers receive and consider science and technology input to public policy development.... aimed at public policy formulation based on scientific evidence”** (NAS, 2020). The implementation models may vary within advisory structures and country but may be within any of three models (NAS, 2020):

1. Technocratic model: policies result from use of scientific evidence generated by scientists. There is no input by co-factors in policy-making,
2. Decisionist model: evidence by scientists is given to policy-makers who decide on how to use the evidence. Evidence informs policy (not policy informing decision-making).
3. Pragmatic model: scientists/advisers generate recommendations and share with policy-makers who may require more information from the scientists.

The use of any of these models or combination thereof may depend on the environment (country, advisory body, etc). The model of evidence – based science advice used by the Cameroon Academy of Sciences is essentially within the Pragmatic Model (Mbah et al, 2019).

Sources of Science Advice

Governments, national and international organizations obtain science advice from **individual consultants, universities,**

research institutes (national, international), national councils, interministerial committees and science academies. *The quality of advice from these sources may not be the same. Given their nature, merit-based science academies have the potential to offer the best advice.*

Science advice to government can be at presidential level, ministerial level (Mbah and Guewo-Fokeng, 2021). Examples include the “Honorary Presidential Advisory Council” in Nigeria (Isoun and Isoun, 2013) and three at Ministerial level (MINEPIA, MINRESI, MINEPDED) in Cameroon (Mbah and Guewo-Fokeng, 2021). At ministerial level, there are individual advisers at the Cabinet and Inspectorate General as well as General Secretariat and Research Institutes along with Universities. Each of these has her advisory mandate. The advice is usually at the request of the Minister.

Quality of Science Advice

The quality of science advice depends on the expertise of the individual advisers, nature of advisory body and their links with government, etc. Science academies usually have the following attributes which make them advisory bodies of preference if quality of the product is desired by the government or organization needing the advice. By their nature, science academies are usually guided in generating evidence-based advice by the following points on which public confidence on the advice depends (Mbah, 2015):

- a. Core values respected in academy reports (relevance, independence, objectivity, integrity, expertise);
- b. Niche within which their engagements are designed;
- c. Quality and diversity of experts (multidisciplinary, national and international, gender balance, expertise);
- d. Absence of conflict of interest;
- e. Delivery process: review and overview of advisory document (national and international, gender –sensitive).

These points constitute/determine the level of confidence/acceptance that the public can have in the advice.

Mechanisms of Evidence-based Science Advice

The Cameroon Academy of Sciences has six approaches, coordinated by the Executive Secretariat, in delivering science advice: “science academy – policy maker interaction for evidence – based decision/policy making” (CAS, 2007). Her engagement in the advice process is triggered by:

- a. Request by sector (ministry, organization, etc), and
- b. Foresight by the academy/academies.

The diversity of experts and multidisciplinary nature (biological sciences, mathematics and physical sciences, social sciences) of the fellowship of the Academy enable it to offer high quality advice:

1. Consensus Studies: “analytical studies conducted by multidisciplinary teams/experts submitted to rigorous review process” with characteristics as stated above (Mbah et al, 2019). Such studies represent the opinion of the Academy. Examples include:
 - a. Elements for a National Biotechnonology Policy in Cameroon (CAS, 2014) (requested by MINRESI).
 - b. Recent Advances in Onchocerciasis Research and Implications for Control (CAS, 2014) (foresight by the Academy).
2. Workshops: Presentations by experts in multidisciplinary committees/teams including policy makers from targeted sectors/ministries. Trust bulding is also involved here. Commissioned on the basis of expertise, the speakers include:
 - a. Policy makers,
 - b. Scientists/researchers,

- c. Science writer(s),
- d. Reviewers and overviews, and
- e. Branding of the report.

The reports represent the opinions of the speakers. Participants leave with new ideas on the problem. Examples include:

- a. The Problems of Urbanization in Cameroon: Strategies for Solutions (CAS, 2017).
- b. Nutrition and Health in Cameroon: Combatting the Crisis – Forum Summary (CAS, 2013).

3.Statements: Positions/opinions of the Academy/Academies on national, regional or international problems. Targets include governments, regional organizations and the United Nations.

The drafting committees are usually made up of experts commissioned by the Academy or group of Academies when the UN is targeted. Such statements are signed by the Executive Committee/Council (if CAS) or Presidents of Academies endorsing the statements. The statements are launched on selected dates at the same time when inputs from various academies have been considered. Examples include:

- a. CAS Statement: Cameroon Academy of Sciences position/response to the COVID 19 pandemic (CAS, 2020).
- b. InterAcademy Partnership(IAP) statement on Climate Change and Biological Diversity: Interlunkages and policy options (IAP,2021).

4.Public Lectures: Expert lectures composed of speaker(s) and discussant(s). Participants include key sectors targeted (ministries, parliament, media, etc). There usually are extensive discussions following the presentations that may lead to new projects and partners. One example is the consensus study on climate change – A Simplified Communication Guide on Climate Change for Parliamentarians and Councillors in Cameroon (CAS,2009).

5. Summaries of key publications in the Journal of the Cameroon Academy of Sciences (JCAS) for the attention of key policy sectors. The summaries are in English and French including the coordinates of the corresponding author in case the targeted sector may need more information. An example is the case of petroleum pricing in Cameroon when MINFI was targeted.

6. Presence of CAS Fellows on sectoral committees: Government Ministries may have CAS Fellows on science related committees. These are designated on request by the President of the Academy.

Conclusion

Evidence – based science advice to policy makers has been summarized. It is defined in three models: technocratic, decisionist and pragmatic. The Cameroon Academy of Sciences uses the pragmatic model in delivering science advice.

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