

## Science Advice and Science Leadership Workshop for Early Career Scientists and Policy Makers

October 31 – November 2, 2019  
Addis Ababa, Ethiopia



This 2 ½ day workshop brought together early career scientists and policy makers for capacity building in East Africa. With leadership from Binyam Sisay (lead organizer, Global Young Academy member, 2019 INGSA Research Associate), Connie N (co-facilitator, GYA co-Chair), Tim Dunne (co-facilitator, KnowInnovation), thirty participants from eleven countries participated in the workshop (*e.g.*, Tanzania, Sudan, Ethiopia, Kenya, and Burundi). The workshop involved a series of presentations, panel discussions, and activities for attendees, which provided rich opportunities for meeting policy makers and researchers in a variety of disciplines. The workshop culminated with participants designing projects, identifying timelines, and proposing key steps to realize project objectives. Participants had opportunities to present their project ideas and receive constructive feedback (see PPCO exercise, below). The group finished the workshop even more energized than at the beginning, with promises of exciting advances ahead.

In the sections below, you will find brief descriptions of the presentations, activities, and resources. Enjoy!

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## Presentations and panel discussions

The first session was chaired by **Dr. Yumiko Yokozeki**, Director of UNESCO International Institute for Capacity building in Africa.



**Prof. Tsige Gebre-Mariam**, President, Ethiopian Academy of Sciences (EAS) spoke to the importance that scientists should provide options, not recommendations; policy makers have to make decisions and set directions based on a wide variety of factors and opinions; evidence is one aspect of that (cultural context is another, for example). He acknowledged the pressures that early career scientists face, including

deciding to what extent to get involved in science advice, recommending “Young scientists under pressure.” [Nature News & Comment, 26 October 2019](#). He also inspired us with Mae Jemisson’s quote: “It’s your life. Go on and do all you can with it.”

**Prof. Afework Kassu**, State Minister, Ministry of Science and Higher Education (MoSHE) of Ethiopia, spoke to the alignment of Ethiopia's strategies with the Sustainable Development Goals and the importance of collecting data to understand what progress is being made in alignment with the SDGs.



**Dr. Oladoyin Odubanjo**, Chair, International Network of Government Science Advice (INGSA) – Africa and Executive Secretary of the Nigerian Academy of Science, physician, and specialist in child health and policy.

How to tackle policies that are made by people standing on their own personal authority and experiences rather than the data and evidence? Scientists can be called on to provide information in complex situations: sometimes those situations can be predicted but the unexpected also arises during crises.

In his keynote that followed the opening, Dr. Odubanjo emphasized how policy decisions are often made fast (e.g., because of a crisis, elections), while science moves more slowly (often concluding that more research is required). How, then, might we reconcile the differences in speed and becoming able to move from first speed (meticulous work, preparing predictions), up to fifth gear (crisis gear such as outbreaks or natural disasters)? Dr. Odubanjo made some important recommendations:

- There is value to being in the media; scientists may worry about being misquoted, but once an issue gets into the news it can start to surface for policy makers
- Consider key audiences (4) and how communication needs to differ between these: scientists, public, policy makers, politicians
- As scientists seeking to give science advice, the following are critical: be humble, maintain integrity, build trust, develop good communication skills

He inspired us to consider the power of Africa, which is the most youthful continent in the world, with 226 million youth (15–25 years): how might we maximize Africa's potential?!



**Dr. Mahlet Mesfin**, Visiting scholar at the Penn Biden Centre for Diplomacy and Global Engagement. In understanding the policy world, know that policy makers convene the people they need to get the outcomes they want. She reminded us that “There is no textbook [on Science Advice].”

**Dr. Victoria Kisaakye**, Senior Program Specialist, UNESCO International Institute for Capacity building in Africa (IICBA). Dr. Kisaakye spoke to critical factors influencing policy formulation, including: politics, socio-economic factors, media, advocacy, and networking. While as researchers, we are ready with evidence, we need to put ourselves in the policy-makers’ shoes—they are trying to build policy from a wide range of perspectives.

She spoke about Uganda’s National Teacher Policy development and the importance of consensus building and competing priorities. Evidence played an important role in that MoES (Ministry of Education and Sports) undertook a comprehensive diagnostic study in Uganda to assess the status of teacher issues and identify critical interventions (e.g., absenteeism, ineffective teaching, ethical conduct of teachers, unclear guidelines on the teacher qualifications and standards, and institutional leadership).



**Dr. Matthew Wallace**, Senior Program Specialist, International Development Research Centre (IDRC), Ottawa. Dr. Wallace spoke to IDRC’s roles in science advice, including research projects (e.g., INGSA, research granting councils and processes, early career scientists and processes). He emphasized that science advance at the national level is critical for priority setting; it can be useful for the public and politicians to see that research can give important

information back to the government or funding body to help make decisions and inform policy. For scientists interested in getting involved, he recommends going close to people and processes around decision making to develop networks and understand what is happening. Can be at various levels (e.g., local, regional, national, international) depending on research area and interest.

**Dr. Moges Yigezu**, Associate Professor of Linguistics, Addis Ababa University described the context of developing comprehensive language policy in Ethiopia. Part of Dr. Yigezu's advice includes having patience and resilience, even when decision-making is slow or not aligned with the evidence.



**Prof. Rees Kassen**, Full Professor and University Research Chair (Experimental Evolution), University of Ottawa, former co-chair of the Global Young Academy. Prof. Kassen encouraged researchers' involvement in science advice for a number of reasons, including that: (i) decision-making legitimacy relies on high quality evidence; (ii) we have no right to complain about the outcomes if we don't

participate in the process—making connections is the first step; (iii) while science has no privileged voice in civic or political discourse, it is one of the voices. Prof. Kassen also gave examples from Canada of connections between researchers and policy makers, including Bacon and Eggheads, briefs to FINA, and regular meetings with leaders of major science institutions in the country

**Prof. Bernard Slippers**, Director of Future Africa, Director of Forestry and Agricultural Biotechnology Institute (FABI) and the Tree Protection Cooperative Program (TPCP), past co-chair of GYA, founder of Future Africa. Prof. Slippers emphasized that this workshop and the Future Africa initiative supports building different kinds of skills than we are typically trained with. One of those skills (and opportunities!) is developing networks in Africa.



Prof. Slippers also closed the workshop by talking about Future Africa.

## Activities

The workshop was filled with activities for the group to engage in, largely designed at science leadership and communication skills. Many of the activities are summarized below, organized by the activity's goal:

### Introduction – explanation

- Workshop principles
  - Suffering is optional (say/suggest something if there is an issue)
  - Be present; you can connect with your phone later
  - Overview of agenda; flexibility of agenda: “no agenda survives human contact”; it will change based on what we are getting
  - Be mindful of the process as well as the output; these activities can be used in many other contexts
  - Sticky notes and markers: one thought per paper, black markers not pens



### To capture ideas

- Activity: One idea per sticky note: (1) Write it (first!) (2) Say it (3) add it (to the table or wall)
  - Capture challenges/obstacles/opportunities that came up during the talk
  - One issue per post it
  - You will look at issues from different perspectives (6 vs 9 perspective). For now, suspend judgment and try to understand one another and genuinely consider what they have to say.
  - Banned language: “Yes, but...”. Instead: “Yes, and...”
- Activity: Frame challenges as “Wouldn’t it be great if...” (WIBGI)

### Arriving at projects

Some of the projects included:

- Increasing capacity building for early career scientists through
  - Incentivizing a spirit of communication through training communication
  - Mentoring
- Create a conducive environment for capacity building for early career scientists to be involved in science advice and science leadership
- Create case studies (e.g., giving a specific issue or priority area that a policy-maker might want to gather evidence on) that will allow researchers to practice presenting their evidence, with feedback from policy makers and other researchers
- Building trust between policy makers and scientists

- Host a conference for evidence-based and political decision-making— both groups are invited, aligned with areas group already care about, e.g. SDGs.

### The problem solving process

- The creative problem solving process (CPS): Diverge/Converge
  - Clarify the challenge (diverge)
  - Generate ideas (diverge)
  - Develop and strengthen solutions (converge)
  - Implement with a flexible plan (converge)
- Divergent guidelines
  - Defer judgment
  - Go for quantity
  - Seek the unusual, things that are overlooked
  - Make combinations, identify connections
  - Write everything down
- Convergent guidelines
  - First:
    - Does it require **imagination**?
    - Do you have **influence**?
    - Do you have **interest** in it?
  - Then
    - Apply affirmative judgment
    - Keep novelty alive
    - Check your biases
    - Identify objectives
    - Stay focused
  - And then: write a short paragraph starting with:
    - What I see myself doing is... OR
    - What I see us doing is...
- Conversation guidelines:
  - Which statement generates more brain activity:
    - There is not enough funding for research in Africa
    - How might we connect to more non-traditional funding sources for research in Africa?
  - Problems posed as questions are invitations for solutions
    - How to... ? (H2)
    - How might we... ? (HMW)

### Generating ideas (divergent thinking)

- Activity: Practice generating ideas
  - Round 1: walk around, point and yell out each thing you point to
  - Round 2: walk around, point and yell out the last thing you pointed to

- Round 3: walk around, point and yell out something that is not even in the room
- 
- Activity: Stick 'em up brainstorming
  - Scribe it, say it, stick it
    - Give everyone a few minutes to capture thoughts (record one option per post-it, use dark marker, write legibly, use short phrases (e.g., 4–8 words))
    - Call out option loud for others to hear
    - Post option for others to see
  - Why do this order?
    - Give space for others to think
    - Not be influenced by others
    - Saying it first, people can feel judged if they don't get a positive reaction, then don't end up writing
  - Not about conversations now
- Activity: Forced connections, e.g. attributes of an apple
  - Brainstorm associations with apples (with full group)
  - Now look at the apple list and the research list and write down connections: e.g., we're going to send apples to policy-makers when we invite them to our meeting
  - Now look at an image and generate new ideas
- Activity: Brainwriting sheets: build on each others' ideas to generate more concepts fast
  - Take one idea from the wall and add two more (or: Write three ideas to fill a row)
  - Toss your sheet into the pile
  - Grab another person's sheet and build on their ideas with three more concepts
  - Takes abstract ideas and helps make them more specific

### Getting to know each other

- Activity: Paper bag artist

### To improve communication

- Activity: 3-way listening
  - A: talker – answer the prompt/question. In essence, think out loud. Use ALL the time allotted (5 minutes).





- B: listener – Look at the Talker and listen generously. Don't speak. Don't interrupt. Just listen.
  - C: Observer and scribe – Listen to the talker, too. Make notes of any "how to?" or "how might we?" questions. Guard the 3-way listening process
  - Each person takes a role. After the 5 minutes, reflect on the process for a few (how did that feel?). Switch roles. Repeat.
- Activity: Identify helping and hindering behaviours
    - Some tables assigned to brainstorm helping behaviours, others to hindering behaviours
    - A few minutes to brainstorm, writing down the ideas (one notetaker)
    - Bring the group together; elicit one idea per table at a time, going around the room. Facilitator lists the behaviours on two separate flipcharts (one for helping, one for hindering)
  - Activity: Giving and receiving feedback (PPCO)

- Positives, potentials, concerns opportunities

- Give feedback using the categories below, with a goal to help the person/group improve their project. Put one idea per sticky note
- **Pluses (+):** positives, benefits, advantages. What's good about the idea the way you hear it
- **Potentials (P):** opportunities, builds, other uses. What ideas came to you while listening to the idea?
- **Concerns (C):** issues phrased as challenges. How to... What might be all the... In what ways might...?
- **Overcomes (O):** Ways to address concerns
- Example of a dog-washing vending machine



- Receiving feedback
  - Feedback is a gift
  - Stay open-minded. You might learn something.
  - Ask for clarification
  - Say thank you
  - Just because you do not reject it



outwardly, doesn't mean you accept it.

- Giving feedback
  - Let the receiver give self-feedback first
  - Start with positives
  - Be as specific as possible (not “it’s nice” instead: “I really like the fact that the idea will do x, y, z”). See how you might describe a behaviour in a way that has no judgement
  - You don’t have to be right.
- Methods for the activity
  - Each group presented their idea (paragraph) for 4 minutes (timed). Clarifying questions could be asked, but no verbal feedback
  - Some time after the presentation to write the PPCO (facilitators gathered and organized the feedback)
  - Then, each group collected their page with feedback and used a blank (framed) sheet to write a build/opportunities page
  - Write down 9 concrete steps to help achieve your plan (convergent thinking)
  - Make an action plan: For each concrete step, fill in a sheet with columns: what, by when, who (one person who is responsible for coordinating/driving the task)
- Group painting activity



### Collective leadership model

- Read overview: <https://leopoldleadership.stanford.edu>
- Activity: identify where each of us is on each dimension



**Thank you to the people who worked tirelessly behind-the-scenes!**



## Resources

- Future Africa: <https://www.futureafrica.science/>
  - Leadership programs: <https://www.futureafrica.science/index.php/leadership-programmes>
  - Connect Us: <https://www.futureafrica.science/index.php/our-community/connect-us>
  - Once you have joined and logged in, you can find more options on the website, including the workshop tools and how to develop your own workshop like this (Science Leadership Program Planning Guide).
- Certificates: <https://africanacademicresearcher.com>
- eHealth Ethiopia: <https://ehealthlab.org>
- Know Innovation: <https://knowinnovation.com/>
- Global Young Academy: <https://globalyoungacademy.net/>
- International Network for Governmental Science Advice: <https://www.ingsa.org>
- Uganda's National Teacher Policy: <https://mastercardfdn.org/wp-content/uploads/2019/07/SEA-Teacher-Preparation-and-Support-Case-Study-Uganda.pdf>

- Collective Leadership Framework: <https://leopoldleadership.stanford.edu>
- The art of science advice to government: <https://www.nature.com/news/policy-the-art-of-science-advice-to-government-1.14838>
- Young scientists under pressure. What the data show: <https://www.nature.com/news/young-scientists-under-pressure-what-the-data-show-1.20871>



