

Ethiopia 2050 Grand Challenges: Considerations for Success

December 19, 2019

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Global trends

Why rightwing populism has radicalised

Populist governments, from the US and UK to Brazil and Hungary, are growing more extreme in power

SIMON KUPER

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China's Belt and Road: The new geopolitics of global infrastructure development

Amar Bhattacharya, David Dollar, Rush Doshi, Ryan Hass, Bruce Jones, Homi Kharas, Jennifer Mason, Mireya Solís, and Jonathan Stromseth ·
April 2019



Biodiversity loss: one million species threatened with extinction

3rd October 2019

Rise of a new era and more “wicked problems”

Anthropocene noun

Definition of Anthropocene

: the period of time during which human activities have had an environmental impact on the Earth regarded as constituting a distinct geological age

Simple	Complex	Wicked
EASY TO SOLVE	RESISTS SOLVING	RESISTS DEFINING
Summary A clear problem with a clear solution	Summary The problem and the solution are not clear but can be understood with time	Summary Problem and solution not understood and keep shifting when we try to define them
Properties Predictable Straightforward Obvious	Properties Many familiar elements Hidden root courses Nonlinear Interoperating parts affect each other	Properties Ambiguous, chaotic Many stakeholders with conflicting perspectives Many elements are hidden and unknown No right or wrong solution Not quantifiable No precedents

Ethiopia: In a position to lead

Government commitment is the key to promoting sustainable development via scientific and technological innovations.

📅 2019-12-13



NEWS / ETHIOPIA

Ethiopia plants more than 350 million trees in a day

Planting spree, which officials say is a world record, is part of a campaign to fight deforestation and climate change.

30 Jul 2019



Ethiopia's challenges <> global challenges



- Additional enablers for success
 - Leveraging global momentum
 - Strengthening science-policy interface
 - Advancing work at the intersection of disciplines
 - Training the next generation

UN Sustainable Development Goals (SDG)



- ST&I plays various roles in progress*:
 - ST&I *for* or *as* individual Goals/Targets.
 - ST&I for SDGs as a system
 - Emerging risks of ST&I
 - International cooperation

* https://sustainabledevelopment.un.org/content/documents/22724Guidebook_STI_for_SDG_Roadmaps_Draft_for_STI_Forum.pdf

SDG overlap with Ethiopia 2050 agenda



Efforts around ST&I for SDGs



Improving Scientific Input
to Global Policymaking
with a focus on the
UN Sustainable Development Goals

Report



The Digital Revolution and
Sustainable Development:
Opportunities and
Challenges

Report prepared by
The World in 2050 initiative

International Institute for
Applied Systems Analysis
IIASA www.iiasa.ac.at

The World in 2050
The World in 2050



STI FORUM 2019
4th annual Multi-stakeholder Forum on Science, Technology
and Innovation for the Sustainable Development Goals
14 - 15 May 2019



AFRICAN SCIENCE, TECHNOLOGY
AND INNOVATION FORUM ON
"Empowering people and ensuring inclusiveness and equality"

16 April, 2019 | MARRAKECH, MOROCCO

United Nations
Economic Commission for Africa
science & technology
Ministry of Higher Education and Scientific Research
Morocco
AfriSTI Forum for the SDGs
empowering people and ensuring
inclusiveness and equality

UN SOLUTIONS SUMMIT

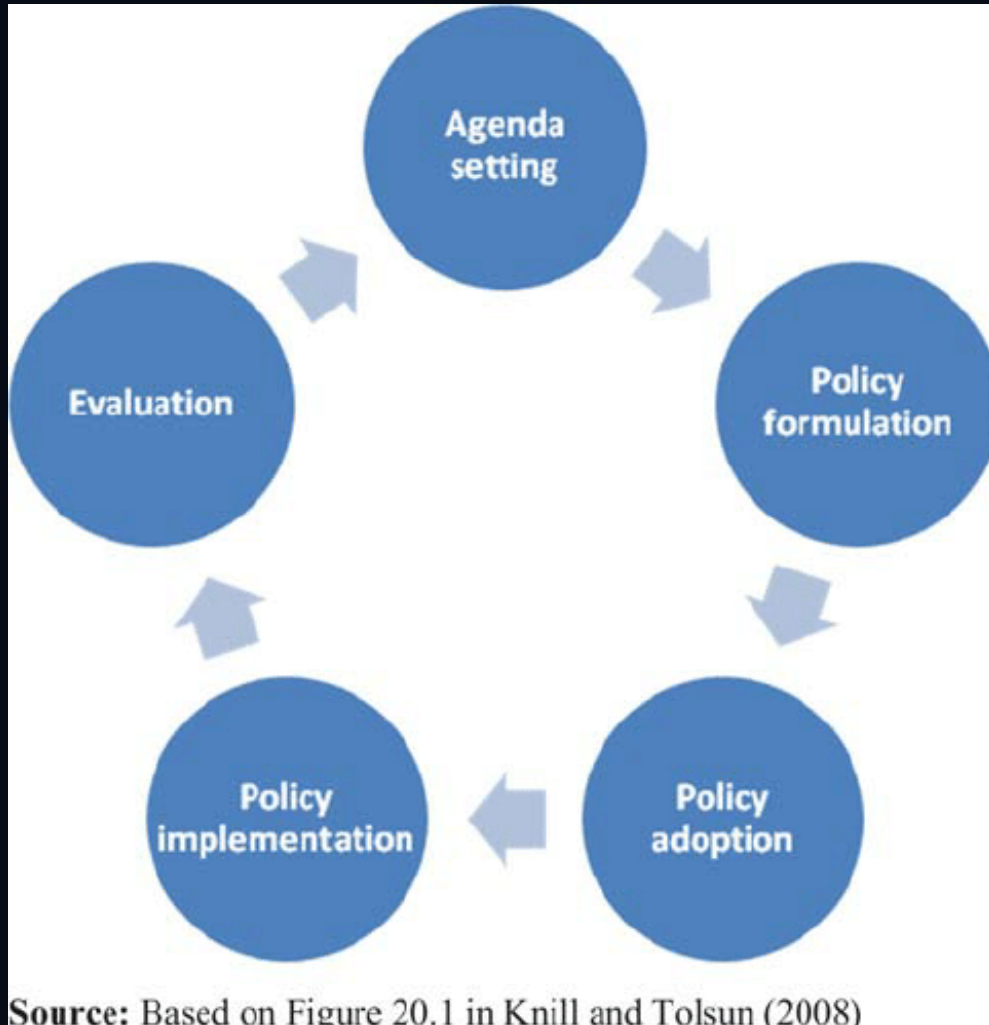
United Nations
September 2019

Ethiopia & ST&I for SDGs



- UN and World Bank developing STI for SDGs Roadmaps
 - Define objectives and scope
 - Assess current situation
 - Develop vision, goals, and targets
 - Assess alternative pathways
 - Develop detailed STI for SDG roadmaps for implementation
 - Monitor evaluate and update plan
- Roadmaps will be piloted in Ethiopia, Ghana, India, Kenya and Serbia

The science-policy interface



- 3 components for strong interface:
 - **Technical professionals** who can translate complex ideas to policymakers and the public
 - **Policymakers** who value evidence and technical input for decision making
 - An **enabling environment** that allows for trust, information flow, and independence of politics and special interests

Source: Based on Figure 20.1 in Knill and Tolsun (2008)

Actors in science, technology and innovation (ST&I) ecosystem

- **Federal Government**
 - Head of State
 - Ministry of Science & others that work on science issues (e.g., energy)
 - Parliament
- **International Organizations**
 - United Nations
 - African Union
 - G20, G77, BRICS, etc.
 - World Economic Forum
- **State and Provincial Government**
- **Non-governmental organizations**
 - Academies of Science
 - Think tanks
 - Funding organizations
 - Scientific societies
- **Academic Institutions**
 - Research & collaborations
 - Policy institutes and centers
 - Degrees and student training
- **Private sector, including public-private partnerships**
- **Individuals and civil society**




Example of science-policy bodies



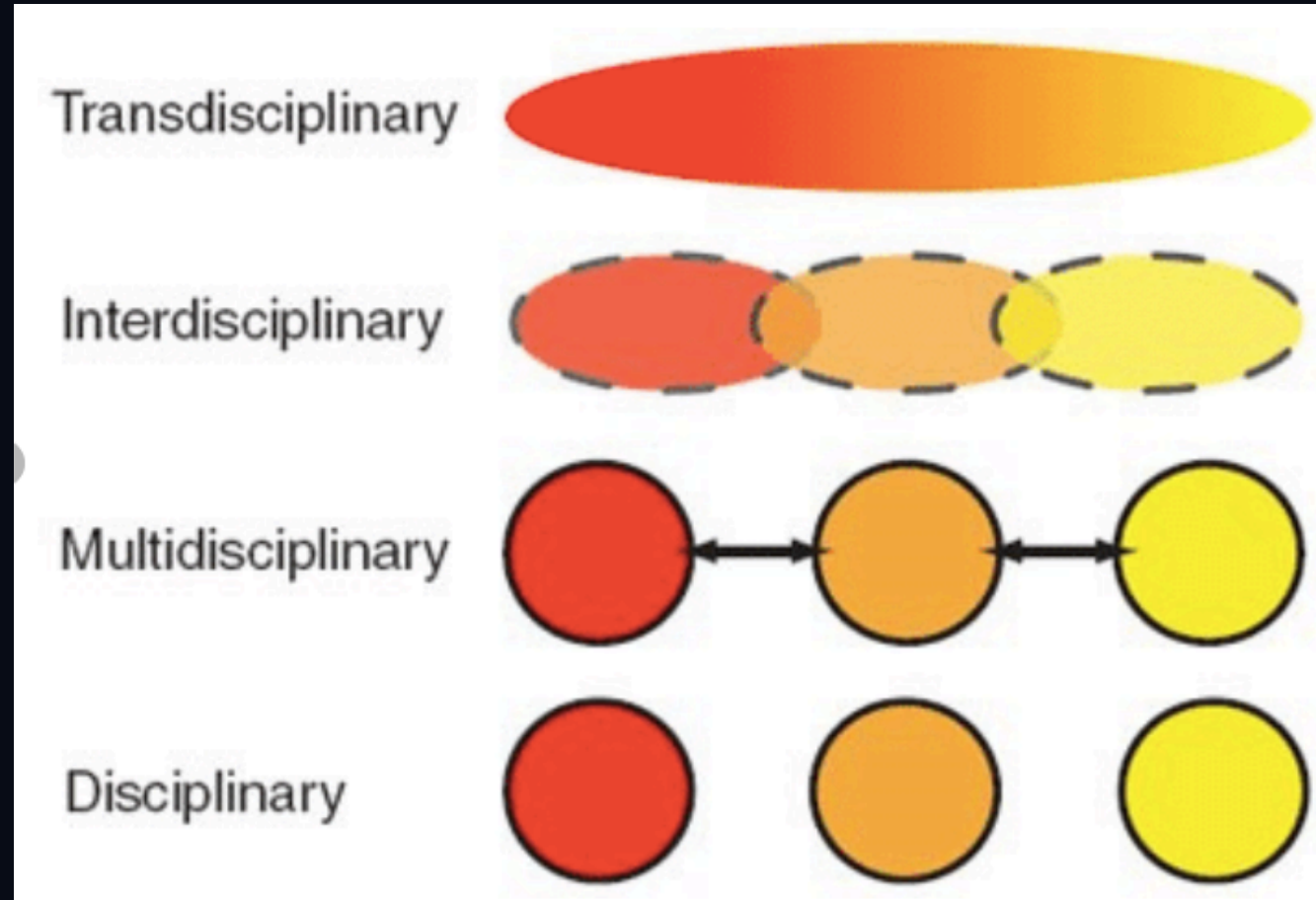
A workshop entitled “North-Eastern Africa Workshop Series on the Role of Science in Assisting Regional Policy Development” held Addis Ababa.

Note: Science and technology can't solve all problems

EXCLUSIVE: EGYPT STALLS LATEST TALKS ON GRAND ETHIOPIAN RENAISSANCE DAM

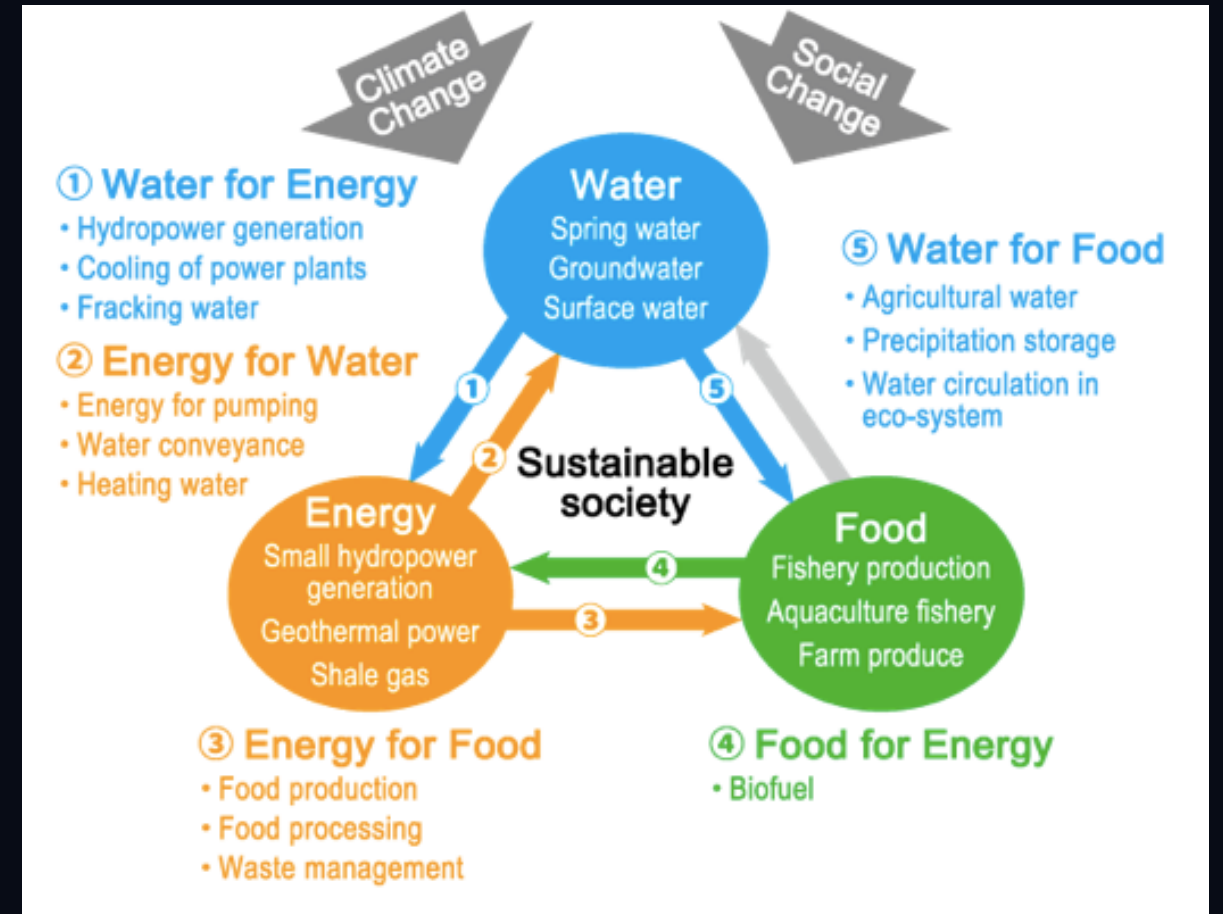
 [addisstandard](#) /  December 4, 2019 /  5.3k

Research that transcends disciplines




Example: Food-Energy-Water nexus

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Example: Planetary Health

- Environmental, animal and human health are closely linked
- Environmental degradation of air, water, and land has resulted in a significant loss in biodiversity → disease patterns are changing and new diseases are emerging

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The importance of the next generation

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Model: NAE Grand Challenges for Engineering

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Model: NAE Grand Challenges for Engineering

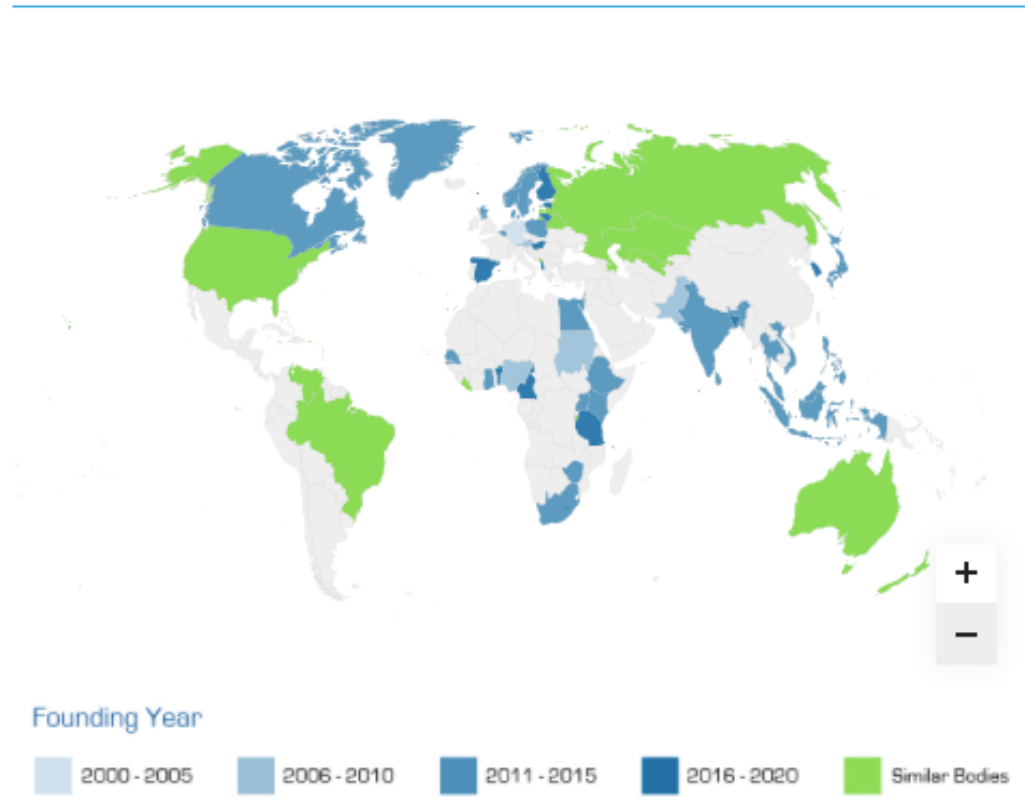
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Can Ethiopia determine a way to educate its students around the Grand Challenges of our time?

Training leaders in science and engineering

National Young Academies



Rise of African and Ethiopia's tech hubs and culture



- Tech companies highlighted
 - BeNu – producing high protein, nutritious biscuits for meal replacements
 - Grohydro – designing and manufacturing of hydroponic farming technology
 - Langbot – AI-powered language tutor

Rise of African and Ethiopia's tech hubs and culture



- Tech companies on display
 - BeNu – producing high protein, nutritious biscuits for meal replacements
 - Grohydro – designing and manufacturing of hydroponic farming technology

Can the tech start-ups be mobilized to find solutions to the Ethiopia 2050 Grand Challenges?

Potential tools for action

Leverage the UN
SDG process and
global
momentum

Strengthen
national science-
policy interface

Advancing
research at the
nexus of
disciplines

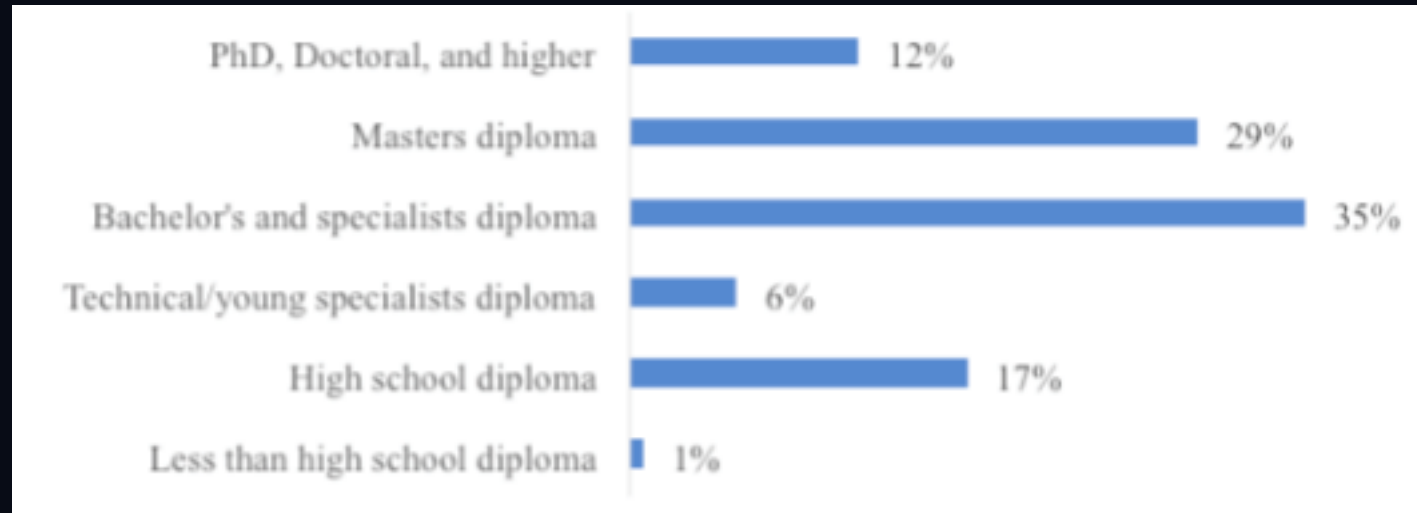
Train and utilize
next generation
STEM
professionals

Diaspora

International Engagement

Maximizing Ethiopian STEM Diaspora

Ethiopian Diaspora in United States: Highest Education Achieved

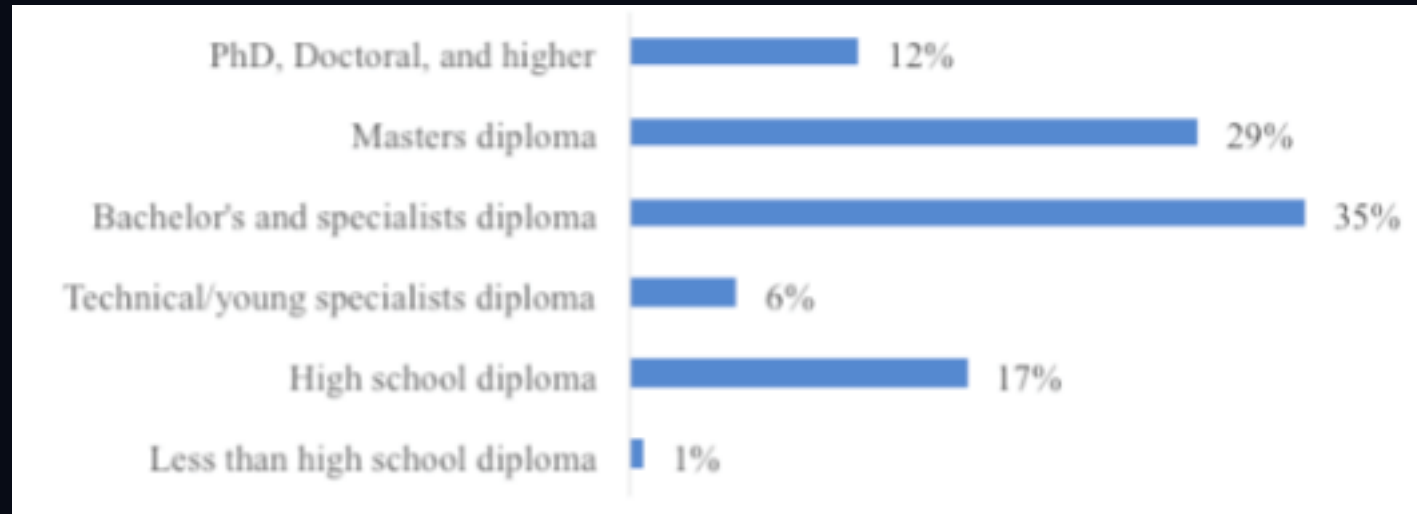


<https://ethiopia.iom.int/sites/default/files/document/Final%20Mapping%20of%20Ethiopian.pdf>

- Challenge: Willingness of diaspora not often matched with opportunity or country needs

Maximizing Ethiopian STEM Diaspora

Ethiopian Diaspora in United States: Highest Education Achieved

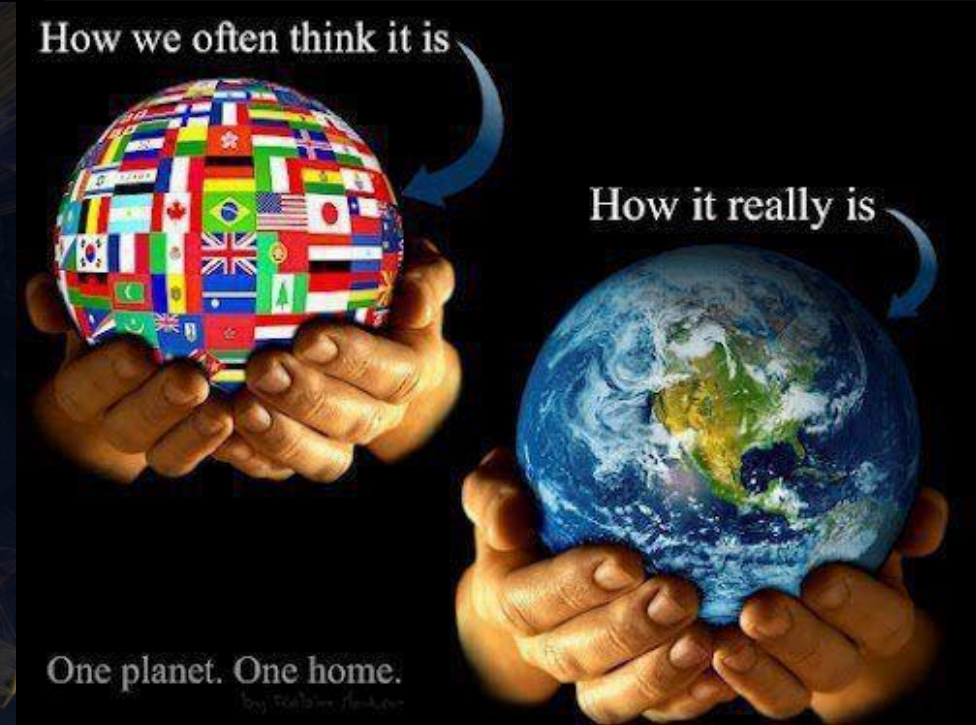
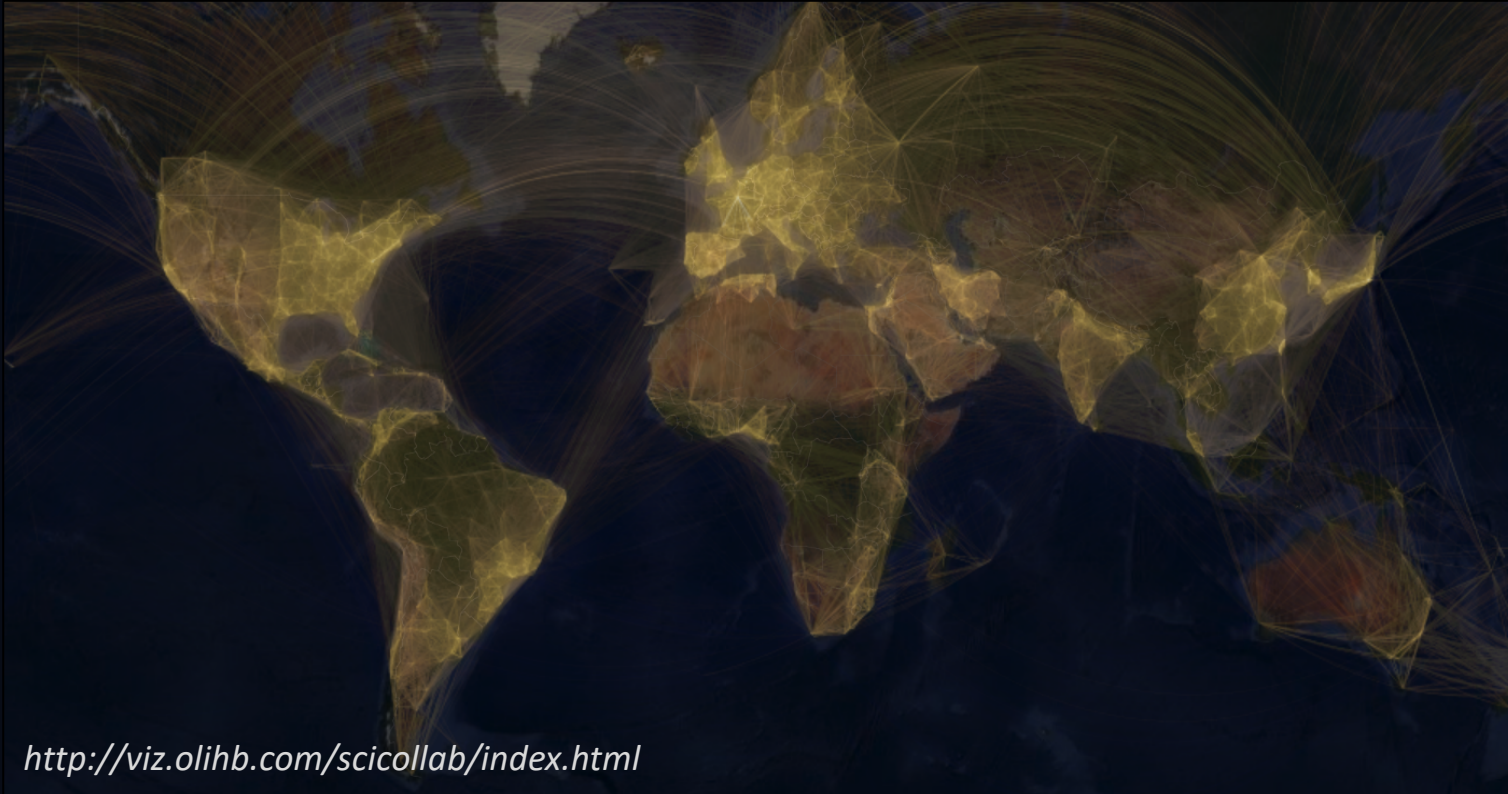


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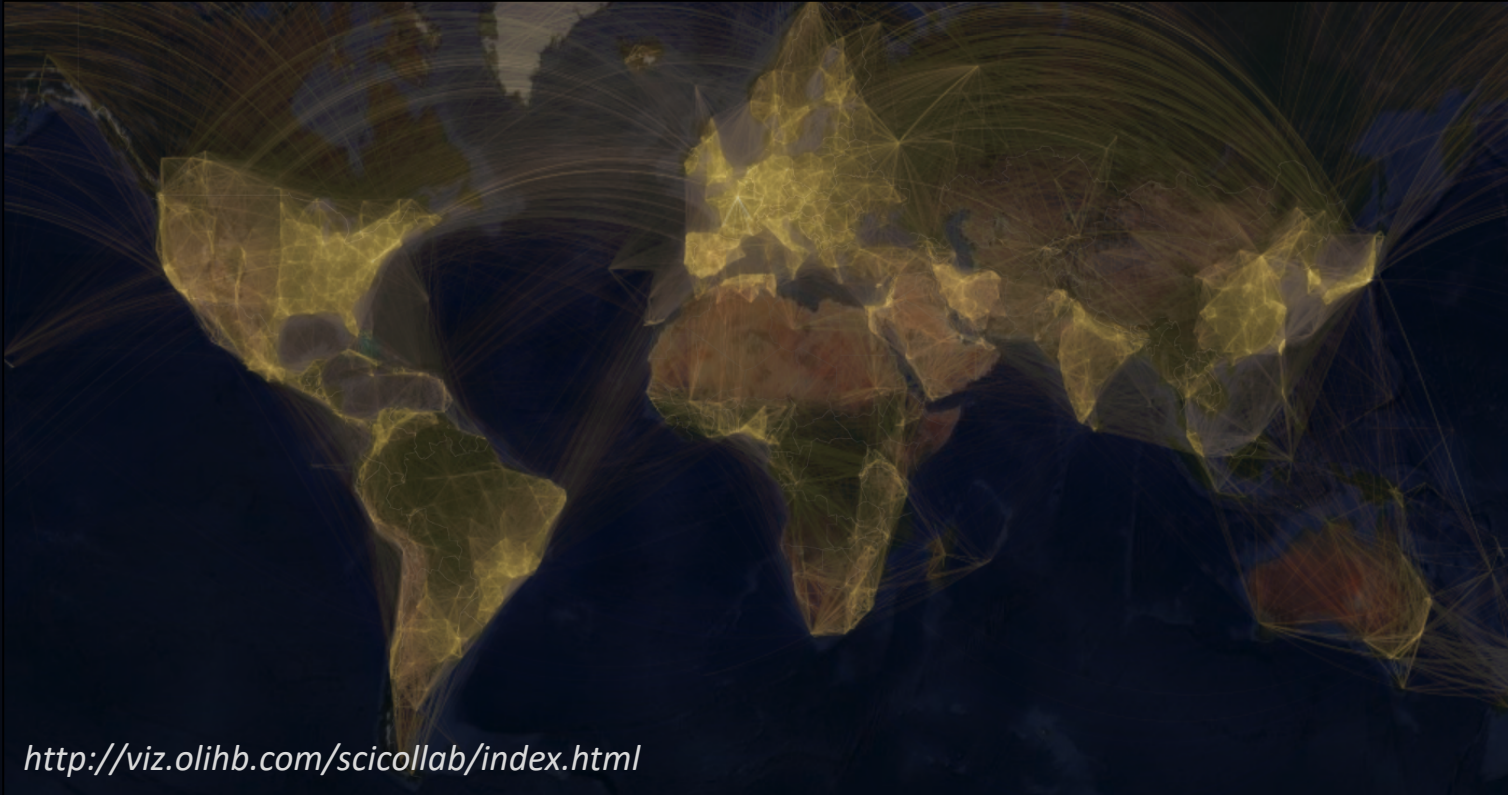
Can there be more effective matchmaking between the skills in the diaspora and the in-country needs?

International engagement for national interests



<http://www.khilafatworld.com/2012/11/picture-perfect-earth-without-borders.html>

International engagement for national interests



How can we learn from others and share lessons learned across the Ethiopia 2050 Grand Challenges to find the best solutions for Ethiopia?

"If you want to go fast, go alone; but if you want to go far, go together."