

SciGirls - Empowering girls in science through astronomy

Ethiopia



→ OAD-IAU 2022 funded project,
with support of SSGI

Mirjana Pović
(on behalf of the SciGirls team)

¹ Space Science and Geospatial Institute (Ethiopia)

² Instituto de Astrofísica de Andalucía (Spain)

³ Mbarara University of Science and Technology (Uganda)

Background and motivation for SciGirls

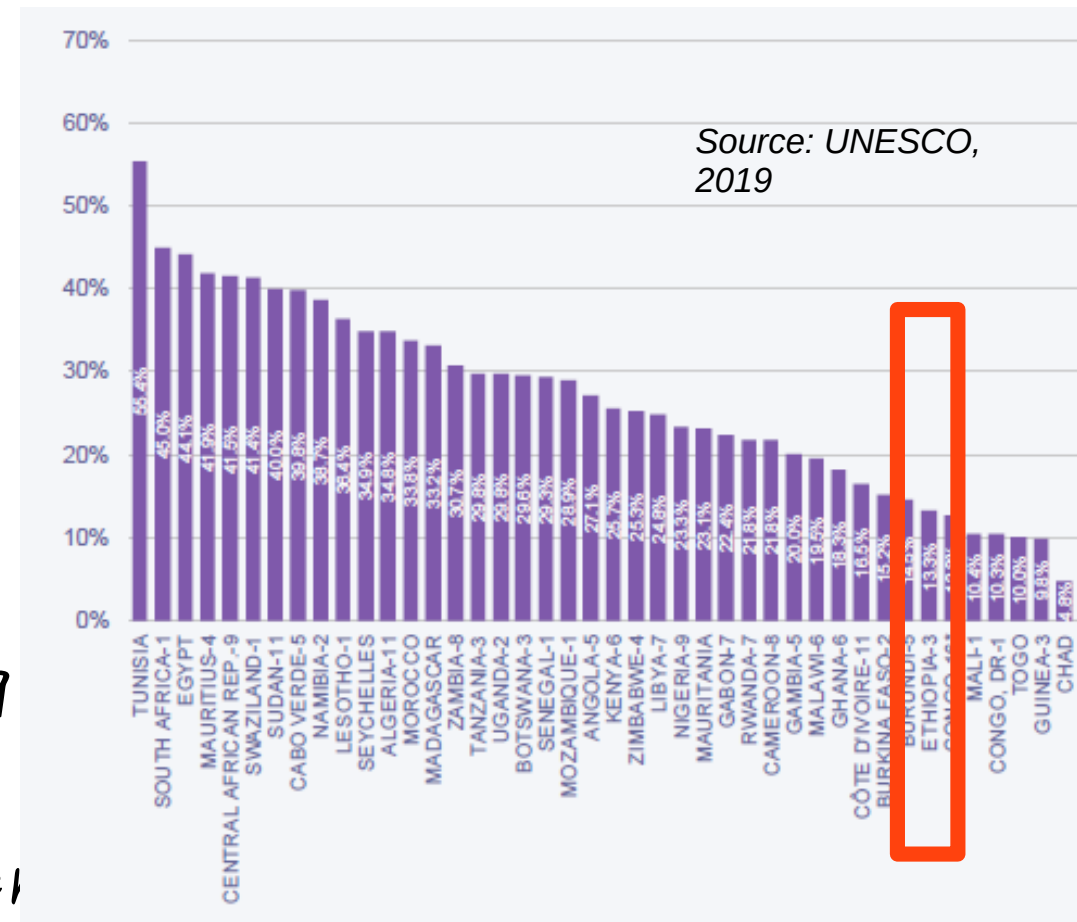


→ is fundamental for achieving



→ gender gap in science worldwide,
in Ethiopia ~ 13% of all
scientists are women
(UNESCO, 2019 report)

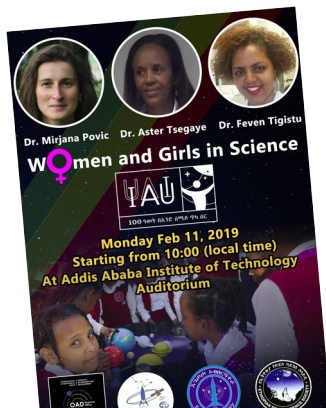
→ astronomy is an emerging
science in Africa and is
important for
socio-economical development
(McBride et al. 2018; Pović et al. 2018)



Background and motivation for SciGirls

→ STEM for GIRLS in Ethiopia' initiative

- From 2019–2021 in collaboration with the Society of Ethiopian Women in Science and Technology (SEWiST)
- Work with ~ 1000 secondary school girls
- Work with > 30 teachers
- Strengthening the role-modeling and mentoring
- Survey conducted about girls in STEM



Pictures from the 'STEM for GIRLS in Ethiopia' activities.



Background and motivation for SciGirls

→ *STEM for GIRLS in Ethiopia* initiative

The slogan of the
Ethiopian Great Run, 2018

Main lessons learned:

- strong interest observed for astronomy and science
- lack of support for choosing STEM
- lack of information
- lack of role models
- difficulties faced in remote and rural areas

→ ~ 80% of Ethiopian population lives in remote/rural areas



Motivation for the SciGirls project under the OAD2022 call
→ Empowering girls in science through astronomy

Idea behind SciGirls and main objectives

- to promote STEM through astronomy and its multidisciplinary.
- to organise a strong capacity-building workshop + follow-up activities in communities.
- to bring a sort of pilot project for creating advocates of STEM.

Focus on the secondary school girls in remote/rural areas and their female science teachers.



Achieve gender equality and empower all women and girls



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



Reduce inequality within and among countries

HCB

Communication

Leadership

Understanding the scenario

Awareness (job opportunities)

Main objectives

SciGirls banner on the streets of Addis Ababa



★ Sci-Girls

*Empowering Girls and Female Teachers
in Science Through Astronomy and Space*

12 - 17 December 2022
Addis Ababa, Ethiopia

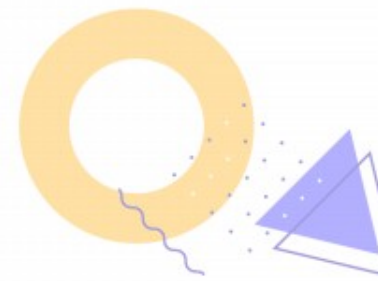
*Support our girls to become professionals and future advocates in STEM
(Science, Technology, Engineering, and Maths) for the benefit of our
society and for Ethiopia's growth.*



In collaboration with



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→ selected 30 participants from remote/rural areas (through Regional Science and Technology Offices and STEM Power)

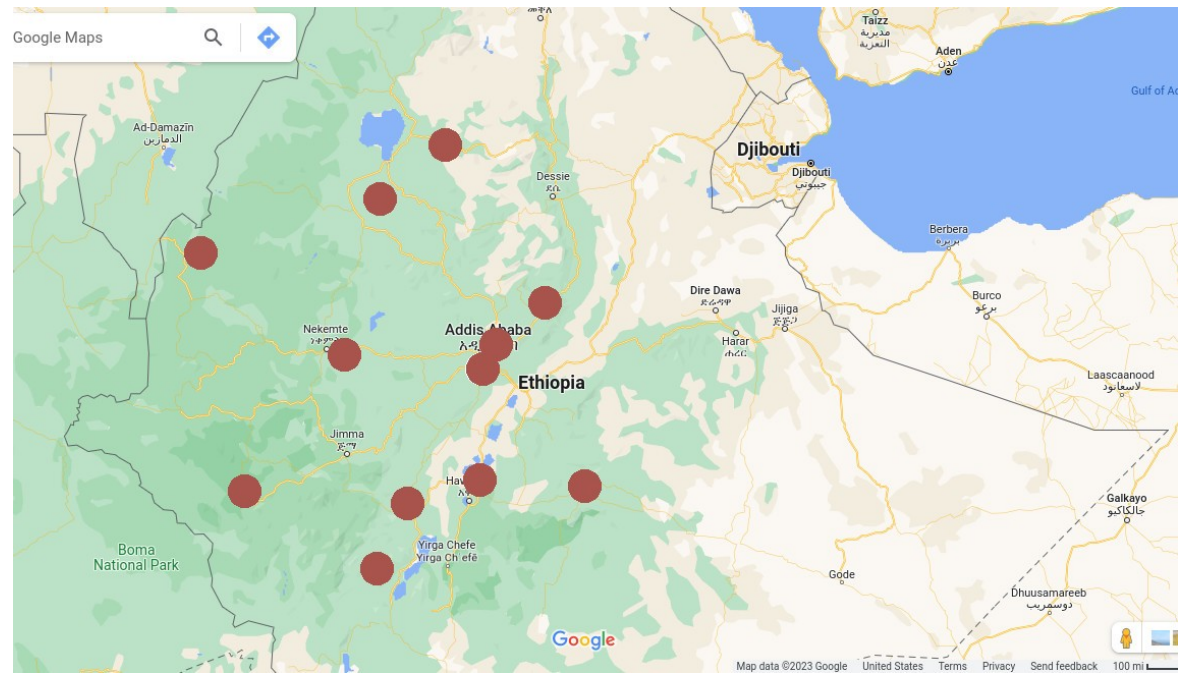
Selection criteria:

- girls from grades 9 or 10,
- public schools,
- interested in STEM,
- not from big cities,
- compromised to promote STEM in their communities,
- with parents' approval,
- with (at least) basic English knowledge,
- science teachers, females, to take care of girls,
- committed to attending the whole training

→ Used languages:

- Amharic
- English (with Amharic translation)

→ Diverse organising team (> 15 people)



Group SciGirls picture.
Credits photos: A. Solomon/

- Diverse trainers (> 20)
- Intensive and diverse program:
 - intro to astronomy (4 talks)
 - astronomy for development (2 talks)
 - intro to space science (3 talks)
 - astronomical observations (2 talks)
 - + stargazing
 - big data science



Credits images: ESSS

→ Diverse trainers (> 20)

→ Intensive and diverse program:

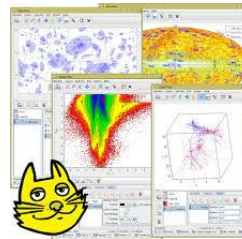
- NASE experiments for teachers
- research projects and presentations



**Supervised
work in 6
groups on
research
projects in
galaxies.**



Testing the polarisation of light.



Testing the parallax.



***All girls presented the
results obtained in their
research.***



→ Diverse trainers (> 20)

→ Intensive and diverse program:

- SSGI exhibition
- Entoto Observatory visit
- Science Museum and New Library visits



Credits images: A. Solomon/M. Pović



- Diverse trainers (> 20)
- Intensive and diverse program
- the importance of STEM
- job opportunities in STEM
- discussion on the educational material



SciGirls – Educational material

What is STEM?

The word STEM stands for science, technology, engineering, and mathematics. STEM education is a broad educational field covering different fields of study based on these four disciplines. It plays a big role in innovation, problem-solving, and critical thinking.



- women and girls in science (open discussion)



→ Main points raised during the open discussion:
challenges faced by girls in rural/remote areas

- workload and family/household duties
- cultural perception of girls and women
- lack of support (in family and school)
- restrictions to go out (they can not study with their classmates)
- lack of self-confidence
- early and forced marriage
- menstrual cycle

Boarding schools
evaluated positively




SciGirls feedback and outcomes

Evaluation form

SciGirls - Empowering girls and female science teachers in science through astronomy

The SciGirls capacity building training for the secondary school girls and their female science teachers coming from rural areas of Ethiopia took place in Addis Ababa from 12 to 17 December 2022. This is the evaluation form, to be filled by all 30 participants. Thank you very much in advance for filling the form and for your time. Your feedback is very much important for our future activities.

 mirjanapovic@gmail.com (no compartidos) [Cambiar de cuenta](#)

*Obligatorio

Your full name *

Tu respuesta

Contact phone number:

Tu respuesta

Do you want to be added to the SciGirls Telegram channel and stay in touch with organizers and participants?

☐ yes

☐ no

Contact email:

Tu respuesta

Very positive feedback has been obtained:

→ 93% ranked the training as an 'excellent' experience (including program, trainers, organisation, etc.).

→ experience with research projects evaluated very positively.

→ 93% fills SciGirls improved significantly their knowledge and skills.

→ 94% changed their opinion about the importance of astronomy for society.

→ 100% changed their opinion about the importance of STEM.

→ 90% filled empowered after SciGirls training.

→ 100% became more inspired and motivated by STEM.

→ 100% expressed they want to become advocates of STEM in their communities.

SciGirls – current status and the way forward

- improving the educational material and working on its translation
- created the Telegram channel for SciGirls
- started getting the first feedback about the activities carried out by participants



Promoting astronomy and STEM with girls in Wolaita Sodo region.

*Credits image:
Helen Bekele (SciGirls teacher)*

- planning the continuation of activities on the field
- planning to continue with workshops (including additional regions)

Main challenges faced:

- reaching and selecting the girls and teachers
- high level of uncertainty, security concerns, and bringing participants to Addis
- funding challenges



Main take-away messages from organisers:

- there are enormous needs to support girls in remote and rural areas
- SciGirls showed to be a good model and can be used as a pilot project
 - astronomy is a very powerful tool for promoting STEM

OAD-IAU and SSGI support to SciGirls is highly appreciated!



Thank you very much for your attention!