

African Strategy for Fundamental and Applied Physics

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Founding Members

Mandating Body : African Physical Society

Steering Committee: ASFAP-SteeringCommittee@cern.ch

- **Dr. Kétévi Adiklè Assamagan** (BNL, USA), ketevi@bnl.gov
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- **Prof. Farida Fassi** (Mohammed V University, Morocco), farida.fassi@cern.ch
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❖ **Vision: Africa should take its equal place as a co-leader in the global scientific process, along with all the social-economic benefits thereto**

Africa's current challenges

- Inadequate infrastructure and resources both for basic and higher education
- Lack of digital literacy
- Little investment in research by governments
- Lack of science-led development
- Brain drain
- Lack of student advisors/mentors
- Etc.....

Some consequences.....

- High levels of poverty
- Lagging behind in Science and technology
- Participation of African institutions in international collaborations (e.g CERN) is minimal



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❖ **Physics can play a vital role in changing the scientific and social status of Africa**

Some key roles of physics

- Enhances our problem solving skills
- Provides a steady supply of trained, competent researchers to exploit scientific advances and discoveries
- Physics is a main component in the education of other scientists (e.g Engineers)
- Physics expands and enhances our understanding of other disciplines
- Physics improves our quality of life by providing instrumentation and techniques for medical applications
- Unexpected spin-offs emerge from fundamental physics research (e.g the world wide web)

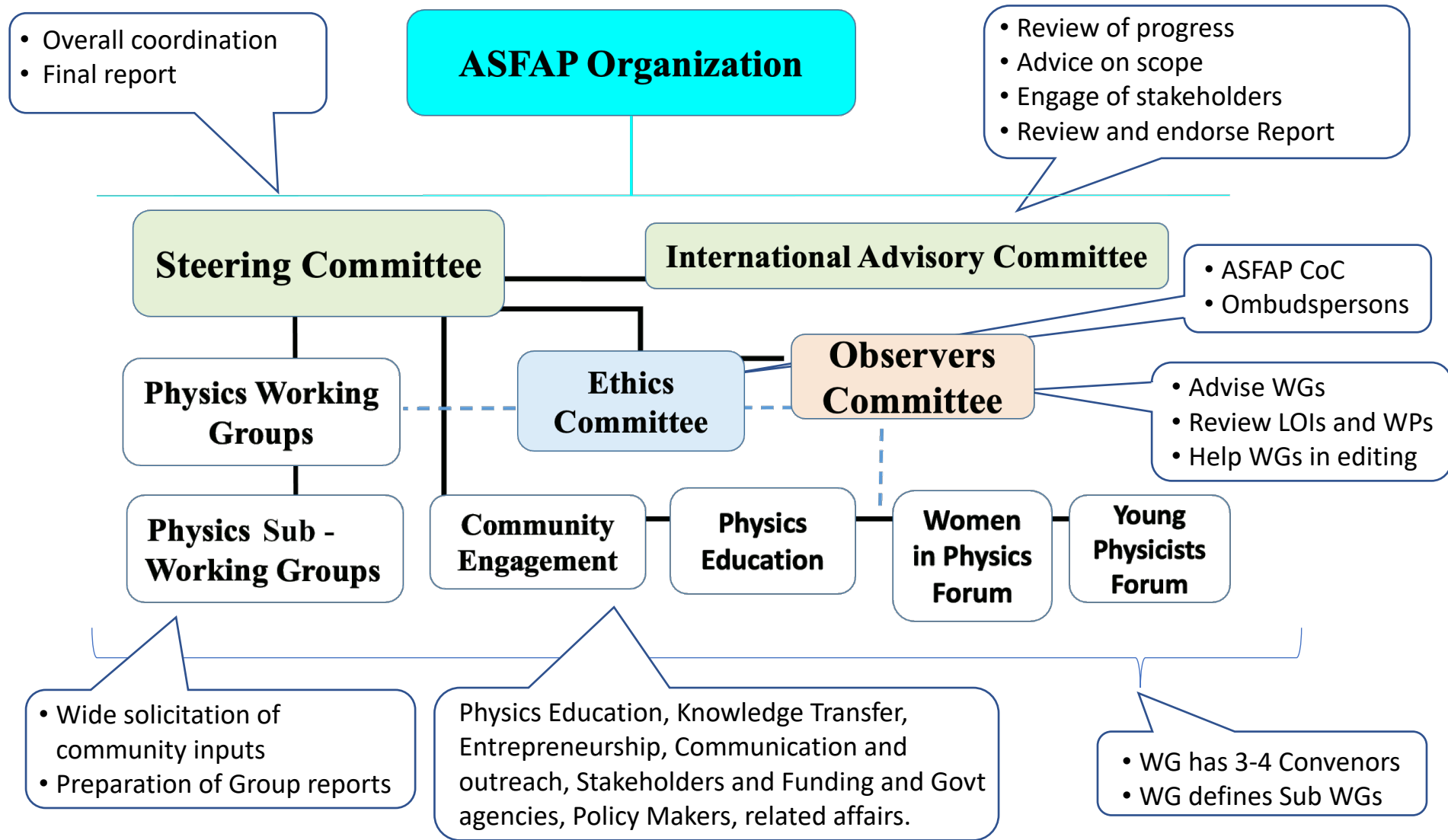


❖ **This (and more) is why we need to promote physics in Africa**

ASFAP Objectives

- ✓ Increase African education and research capabilities and improve collaborations
- ✓ Inform international partners, sponsors and policymakers on the strategic directions likely to impact African development
- ✓ Engage African scientists and the international community in the Strategy development
- ✓ Set the foundation and framework to draw the participation of African physicists in defining education and physics priorities most impactful for Africa
- ✓ Release a strategy report which will suggest the direction, with actionable items for the next decade. **[to be repeated periodically, every 7-10 years]**

Structure and Organization



Physics working groups

Accelerators

Computing and 4IR

Condensed matter and materials physics

Atomic and molecular physics

Light sources

Nuclear physics

Astrophysics and cosmology

Instrumentation and detectors

Energy

Biophysics

Earth science

Optics and photonics

Particle physics

Medical physics

Fluid and plasma

The ASFAP process

Letters of interest (LOI)

- Short documents (1-2 pages)
- Description of ideas on research areas most impactful for Africa



White papers

- Conveners collate LOIs to define major topics that will form the basis of white papers
- LOI authors produce whitepapers on their research topics
- Conveners compile a group summary report

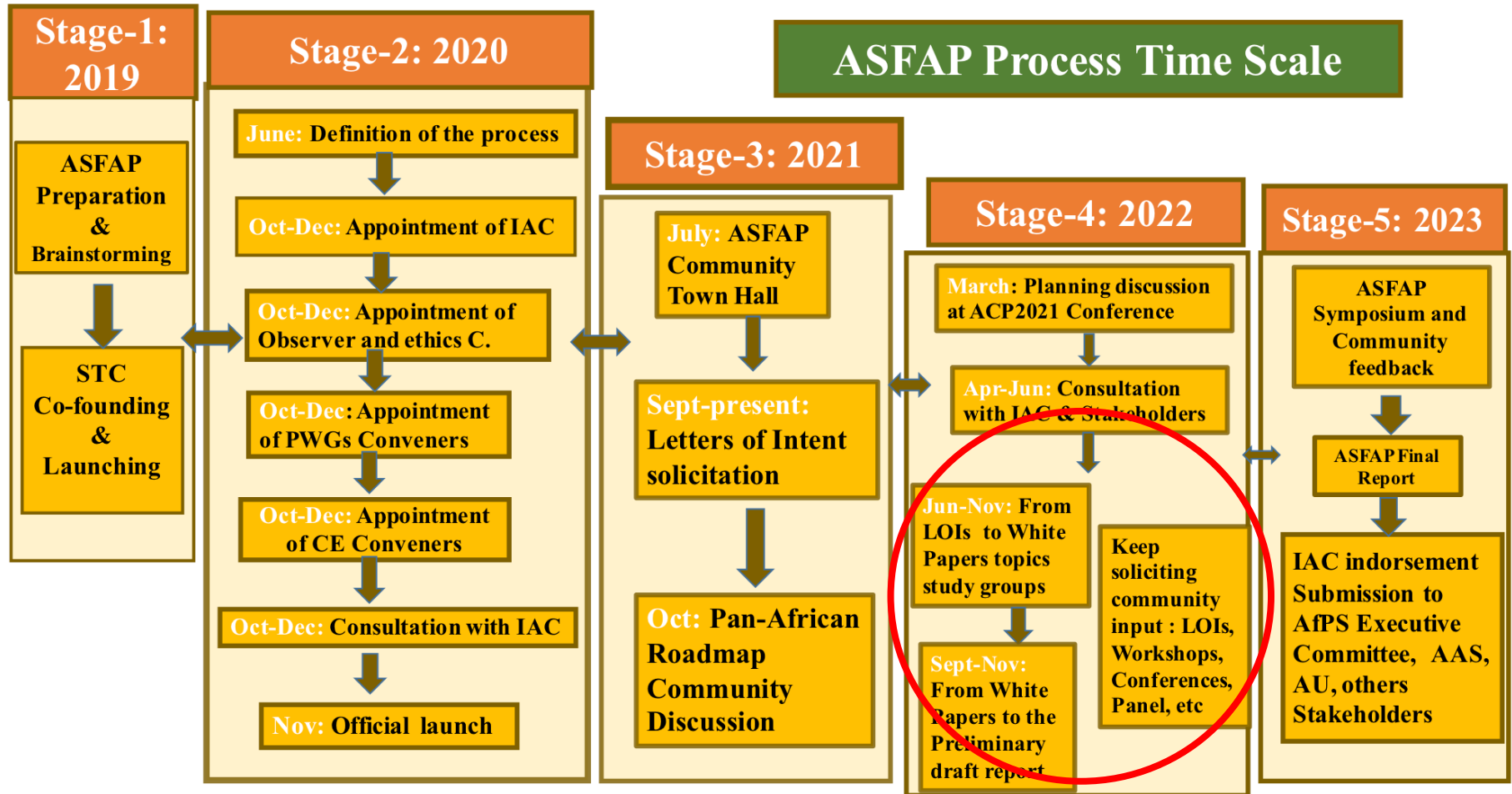


Strategy report

- Compile group summary reports into a strategy report
- Strategy report also includes recommendations to policy makers
- Report will suggest the direction, with actionable items for the next decade


- ❖ **The process is to be repeated every 7-10 years for the following decades with a review of the impact of previous strategies**

Where are we now?



- Solicitation for LOIs is still ongoing
- Preliminary report based on African Conference of Physics ([ACP 2021](#)) proceedings

How can you participate

- This strategy is for you and your voice matters
- Join one of the working groups
- Submit an LOI in your area of interest
- Be a part of the **young physicists forum**
- To register, navigate to the ASFAP webpage and click on any of the groups listed on the left panel of the webpage 
- **You are the next generation of Physicists in Africa so get involved now and tell others about it!**

PHYSICS GROUPS

- Accelerators
- Astrophysics & Cosmology
- Atomic & Molecular Physics
- Biophysics
- Computing & 4IR
- Earth Science
- Energy
- Fluid and Plasma
- Instrumentation & Detectors
- Light Sources
- Condensed Matter & Materials Physics
- Medical Physics
- Nuclear Physics
- Particle Physics
- Optics and Photonics
- Complex Systems

ENGAGEMENT

- Community Engagement
- Observers
- Ethics
- Physics Education
- Women in Physics Forum
- Young Physicists Forum

For more information:

Web : <https://africanphysicsstrategy.org/>
Twitter: <https://twitter.com/StrategyAsfap>