Capacity-building approach for space laws and policies for (emerging) African countries

The importance of capacity-building in Africa

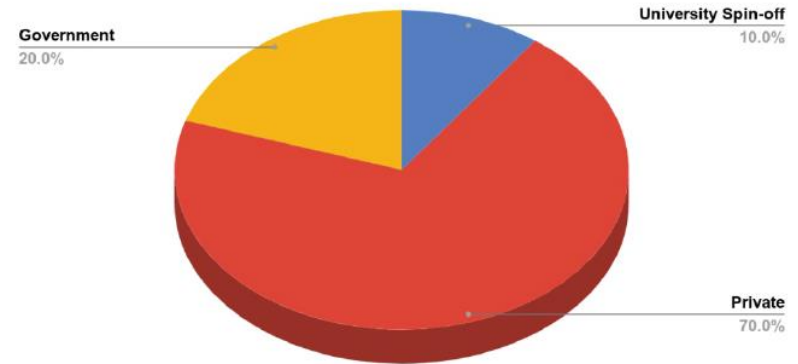**AFRICA**

- 54 countries

- Over 1,500 languages

- Over 1.2 billion people

# The importance of capacity-building in Africa

Africa in Space

- African space market: over USD 7 billion annually

- Projected to likely grow over 40% in the next five years to exceed USD 10 billion by 2024

- NewSpace startups in Africa have attracted investment at over $200 million

- About 8,500 people work across the African space industry

- Approximately 2,000 of these people work for commercial companies, while the others are employed by governments through national space programmes and research centres

Government
20.0%

University Spin-off
10.0%

Private
70.0%

Formation of commercial space companies in Africa
Source: African Space Industry Annual Report, Space in Africa, 2019 Edition

The importance of capacity-building in Africa
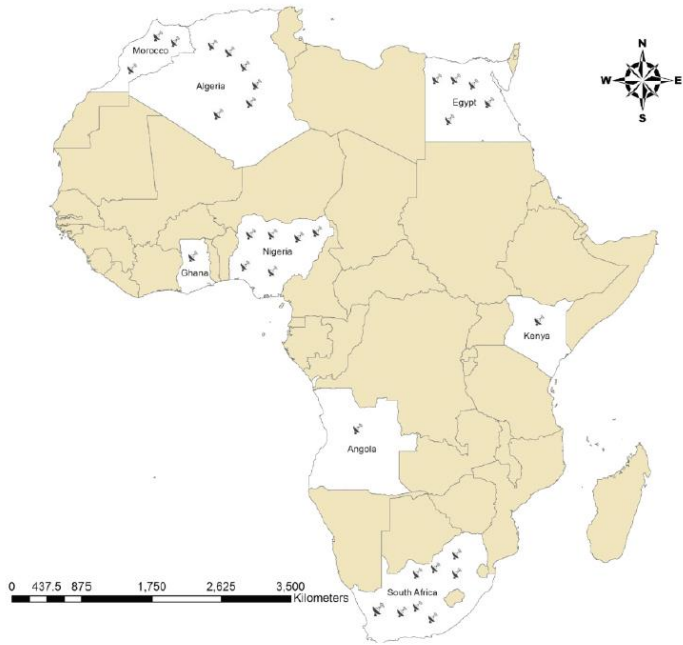
African countries and satellites launched
Source: African Space Industry Annual Report, Space in Africa, 2019
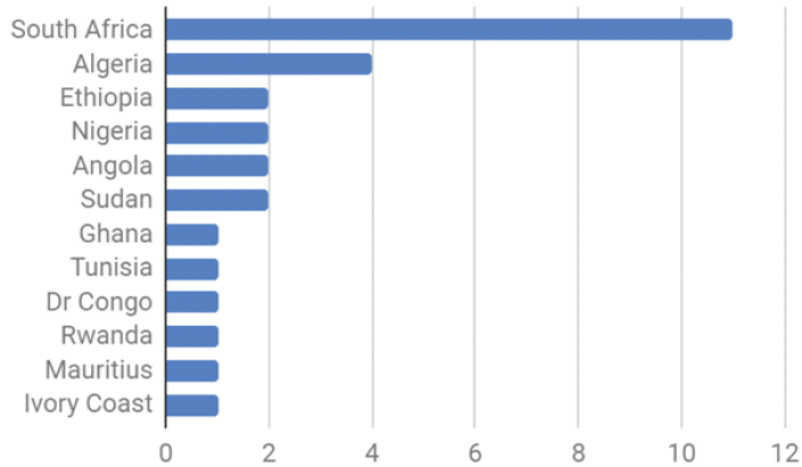Edition

Africa satellites

From 1998 through May 2019: 32 satellites were launched into orbit by eight African countries: Algeria, Angola, Egypt, Ghana, Kenya, Morocco, Nigeria, and South Africa.

- 15 out of the 35 satellites were launched in the last four years
- 14 Earth observation satellites
- 10 communications satellites
- 8 technology demonstration satellites
- A satellite for scientific experiments
- A educational project satellite
- A military radar satellite

African engineers built 14 of the 35 satellites, including those they built in Africa and others using facilities outside of Africa

The importance of capacity-building in Africa

Expected satellite launch June 2019-2024
Source: African Space Industry Annual Report, Space in Africa, 2019 Edition

Africa satellites

- Expected that, by 2024, at least 15 African countries would have launched at least one satellite into space (Algeria, Angola, DR Congo, Egypt, Ethiopia, Ghana, Ivory Coast, Kenya, Mauritius, Morocco, Nigeria, Rwanda, South Africa, Sudan and Tunisia)
- Total projected number of satellite by African countries rising from 35 to 64 within the same period

About 83% increase in the number of satellites in the region

Most satellites are small satellites (under 500 kg)
22 out of the 29 satellites expected to be launched between June 2019 and 2024 are Earth observation satellites, with the remaining 7 being communications satellites

Governmental level

Private /civil society level

Governmental level

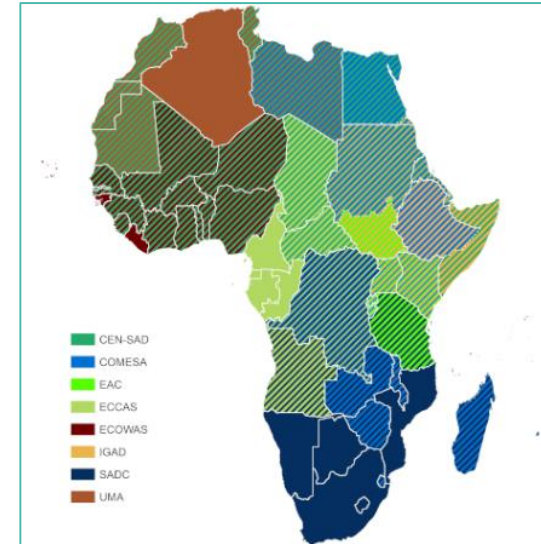## Approach to capacity-building in space laws and policies

Learning
• What
• Who
• How

- **National**: The current policy environment in the country:
  - Cross-sector and sectorial policies and goals
  - Relevant institutional framework

- **Regional**: The current policy environment in RECs that may benefit from space products, services and data

- **Continental**:
  - AU Policy, Strategy and Space Agency
  - Others relevant: e.g., EU

- **International**: UN (SDG, COPUOS/UNOOSA, ITU), Space Treaties, others

CEN-SAD
COMESA
EAC
ECCAS
ECOWAS
IGAD
SADC
UMA

Source: UNECA

Governmental level

Approach to capacity-building in space laws and policies

Learning

- What

- Who

- How

- **Other organisations**
  - PALOP (African Countries with Portuguese as Official Language)
  - SIDS (Small Island Developing States)
  - Outermost regions of the EU
  - …

- **Other countries - benchmarking**
  - Traditional approach
  - Innovative approach

PALOP
Source: Wikipedia

Role of space, of space policies and of space laws

Governmental level

Approach to capacity-building in space laws and policies

Learning	
• What	
• Who	Relevant public stakeholders contributing or using space technologies, data, products and services Relevant private stakeholders (companies / civil society) developing or using space technologies, data, products and services
• How	

Governmental level

Approach to capacity-building in space laws and policies

Learning	
• What	
• Who	• On site workshops
	• Participation in international conferences
• How	• Internships

Governmental level

Approach to capacity-building in space laws and policies

Learning	
PURPOSE	All relevant stakeholders know the basics of space policies and laws All relevant stakeholders are aligned Best practices and lessons are learned, and countries may leap-frog if possible

Governmental level

Approach to capacity-building in space laws and policies

Countries with COPUOS Membership out of the 19 countries with active space programmes.
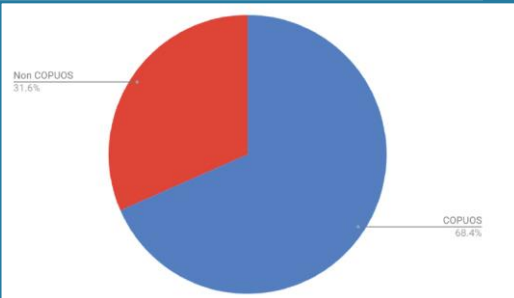Source: African Space Industry Annual Report, Space in Africa, 2019 Edition

Talking

- About what

- With whom

- How

- Priorities of the country (general / sectoral) and the role of Space, in the short, medium and long term

- Initiatives to be a part of

- Allocation of responsibilities

- Creation of metrics and auditability mechanisms

Governmental level

Approach to capacity-building in space laws and policies

Talking	
• About what	
• With whom	• The relevant national stakeholders (public and private) • Relevant regional, continental, international and foreign stakeholders (public and private)
• How	

Governmental level

Approach to capacity-building in space laws and policies

Talking	
• About what	• Workshops
	• Conferences
• With whom	• Dedicated meetings and/or commissions
• How	• Public consultations

Governmental level

Approach to capacity-building in space laws and policies
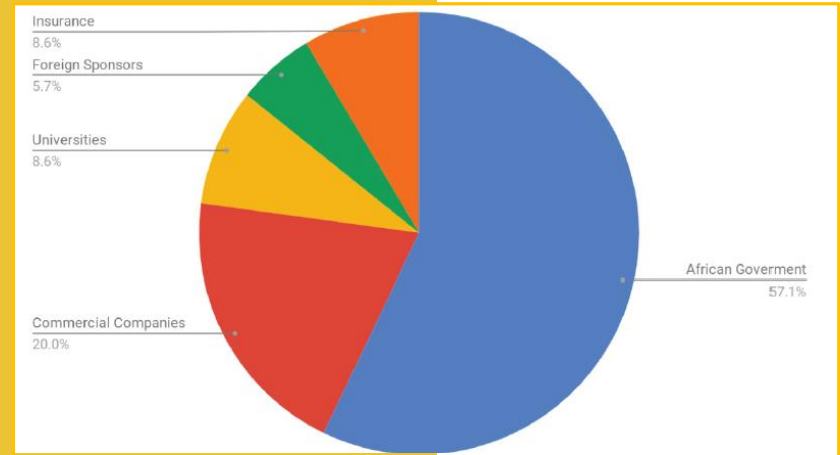
Talking	
PURPOSE	• Obtain relevant inputs from more experienced stakeholders • Guarantee the commitment of all relevant stakeholders to the project • Align the laws and policies to the goals and concerns of the relevant stakeholders

Governmental level

Approach to capacity-building in space laws and policies

- Priorities in the short, medium and long term

- Institutional framework

- Financing framework

- Partnerships

Choosing

Insurance
8.6%
Foreign Sponsors
5.7%
Universities
8.6%
African Goverment
57.1%
Commercial Companies
20.0%

Sources of funding for satellite projects in Africa
Source: African Space Industry Annual Report, Space in Africa, 2019 Edition

Governmental level

Approach to capacity-building in space laws and policies

- Define the approach of the country to space in an appropriate timeframe and in accordance with the capabilities of the country

- Create confidence in the market

Choosing

PURPOSE

African countries with a space policy
Source: African Space Industry Annual Report, Space in Africa, 2019 Edition

Governmental level

Approach to capacity-building in space laws and policies

African countries and OST
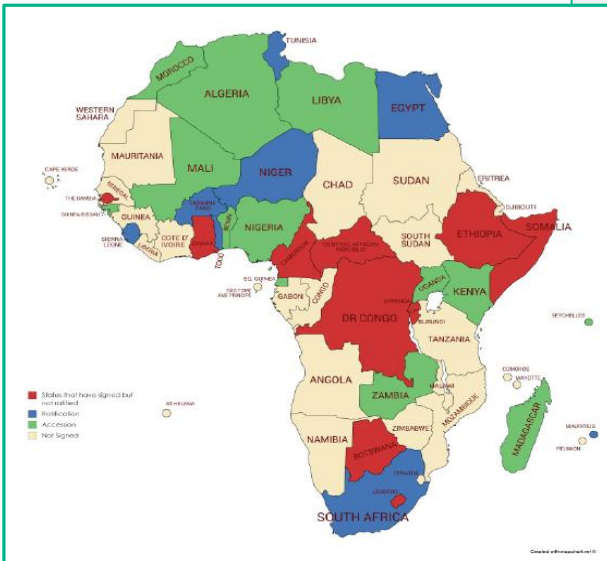Source: African Space Industry Annual Report, Space in Africa, 2019 Edition

- The Space Policy
  - E.g., (short-term) strategies for priorities identified in the policy

- The Space Law
  - Development of regulations and orders
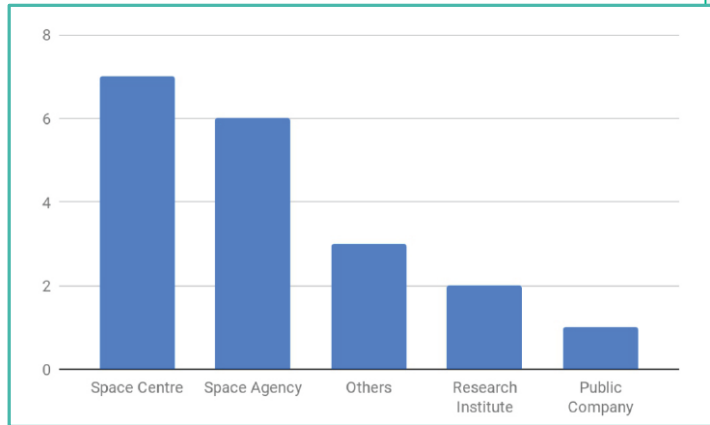 - Detailed explanatory statements

Executing

- What

- By whom

- How

Governmental level

Approach to capacity-building in space laws and policies

Authorities implementing space programs in Africa
Source: African Space Industry Annual Report, Space in Africa, 2019
Edition

- The entities identified in the Policy or Strategy
  - E.g., Space Authority, Space Agency
  - E.g., sectoral agencies
  - E.g., civil society

Executing

- What

- By whom

- How

Governmental level

Approach to capacity-building in space laws and policies

- Guidelines / explanatory memoranda

- Allocation of powers to relevant stakeholders if needed

- Institutional framework that allows seamless coordination among all stakeholders

- Knowledge in using space products, services and data

Executing

- What

- By whom

- How

Governmental level

Approach to capacity-building in space laws and policies

- Guarantee that the goals of the policy and law are effectively pursued
- Guarantee fully aligned and consistent policy and legal frameworks
- Create confidence and transparency to the market

- Give national stakeholders the tools and knowledge to be autonomous

Executing

PURPOSE

Private / civil society level

Approach to capacity-building in space laws and policies

Learning

Seizing

Growing

Private / civil society level

Approach to capacity-building in space laws and policies

Learning	
• **What**	• **National:** the laws and policies of the relevant countries (establishment; place of launch) – scope of application, license, insurance & liability, registration, fees, others. The institutional framework
	• **Regional and Continental**: areas of investment where space products, services and data may be relevant; calls, grants
	• **International**: relevant organisations, initiatives
	• **Contracts**
• **How**	• Conferences, exhibitions, courses, hands-on capacity-building, internships, incubators, hubs, incentives
	• Create awareness

Private / civil society level

Approach to capacity-building in space laws and policies

Seizing	
• What	• The opportunities brought by space laws and policies
• How	• Public consultations of laws and policies
	• Cross-sector, public-private formal or informal discussion structures/commissions
	• Articles, thesis, books
	• Exhibitions

Private / civil society level

Approach to capacity-building in space laws and policies

- The opportunities for capacity-building
- The added-value and application of obtained capacity

- Regular courses, exhibitions, news
- Technology / knowledge transfer models
- Scholarships
- …

Growing

- What

- How

And also

Importance of developing a holistic vision of space laws and policy, which goes further than strict space matters and includes other frameworks to help develop the space sector

This guarantees a comprehensive approach to laws and policies with impact in the space sector

Contacts

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