

What the First Kenya University Nanosatellite Precursor Flight 1KUNS-PF means to the Country

Karanja Faith Njoki

University of Nairobi, Department of Geospatial and Space Technology

Email: faithkaranja@uonbi.ac.ke

Introduction

Luigi Broglio Space Centre (BSC) located in Kenya is managed through a Bilateral Agreement between Governments of Kenya and Italy (1st April 1987).

The infrastructure at the Centre include San Marco Platform (main off shore launch site), control platforms, data reception and communications ground station on the mainland.

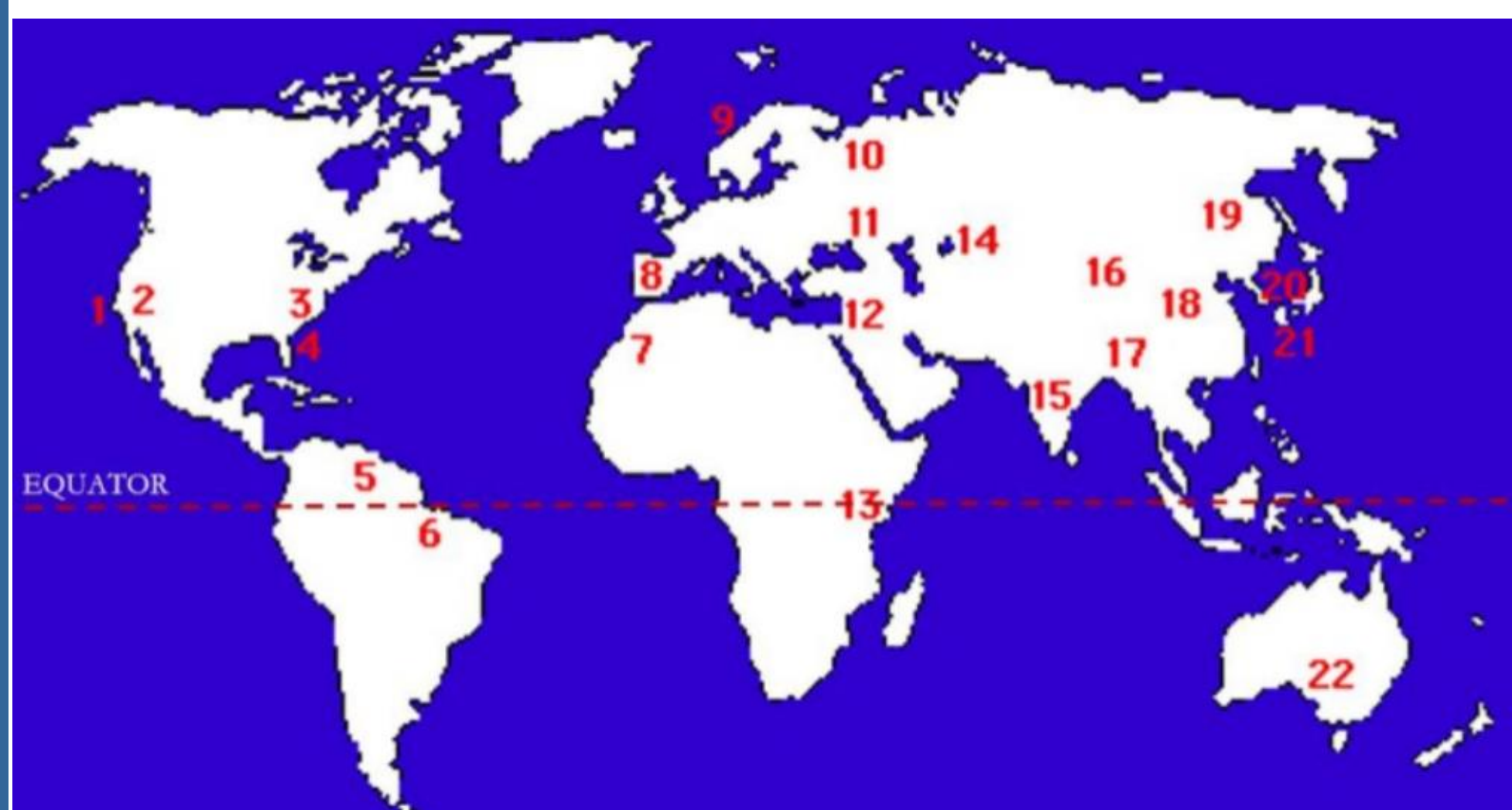
San Marco Platform has been in use between 1967 to 1988 with a total of 27 launches.

An MoU signed in 2002 between University of Rome and University of Nairobi provided among other things collaboration in research and education of common interest specifically on utilization of space resources and capacity building.

Renewed efforts in 2015 in the MoU created a platform for the First Kenya University Nanosatellite (1KUNS)

Kenya's Advantage Position with respect to Space Activities

Equatorial Launch Pads: 5 (Guiana Space Centre in Kourou, French Guiana) 6 (Alcantara Launch Centre, Brazil) 13 (Luigi Broglio Centre, Malindi, Kenya).

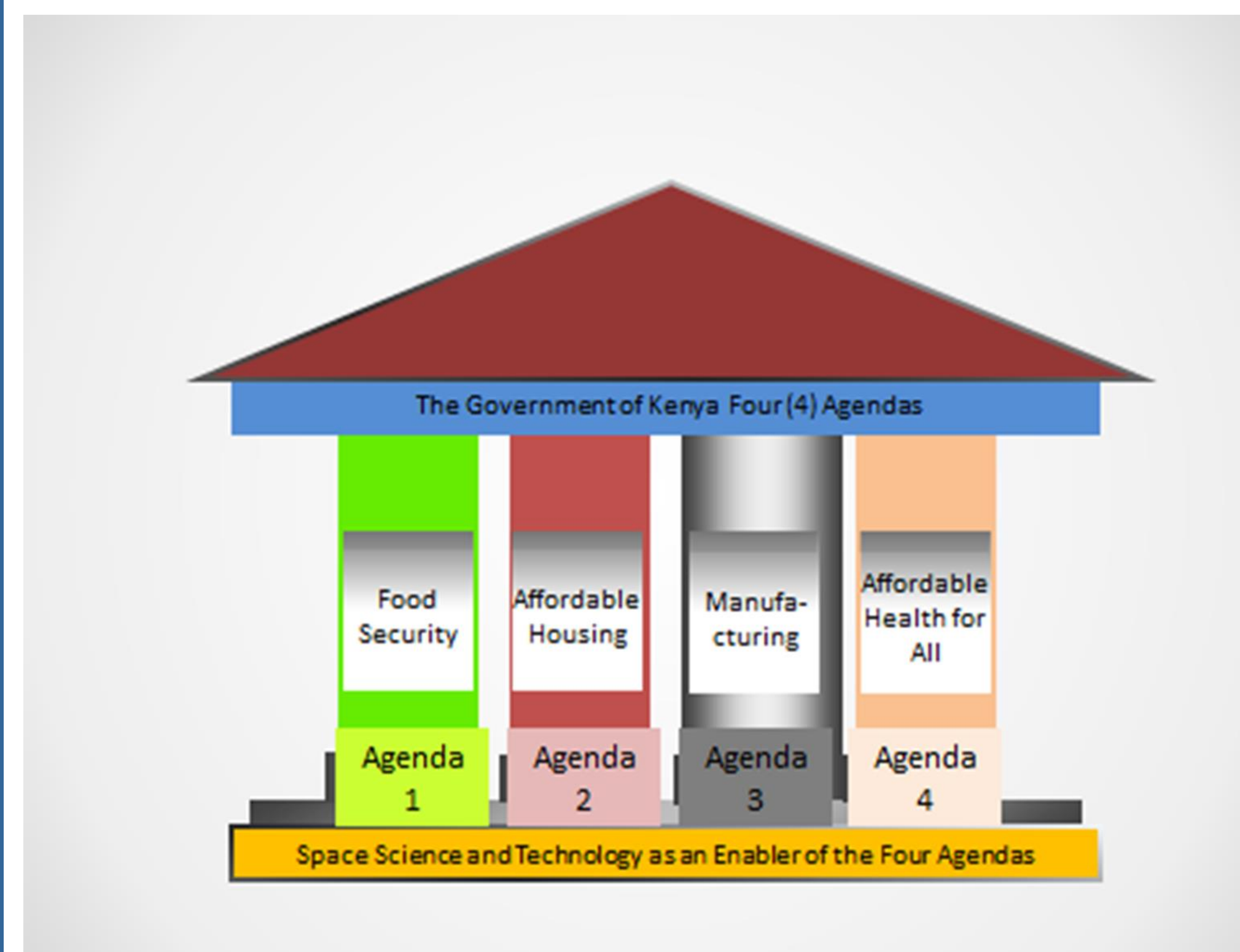


Nineteen (19) Launch Pads Across the World, including 3 Equatorial Launch Pads(5,6,13)

National Priority Areas

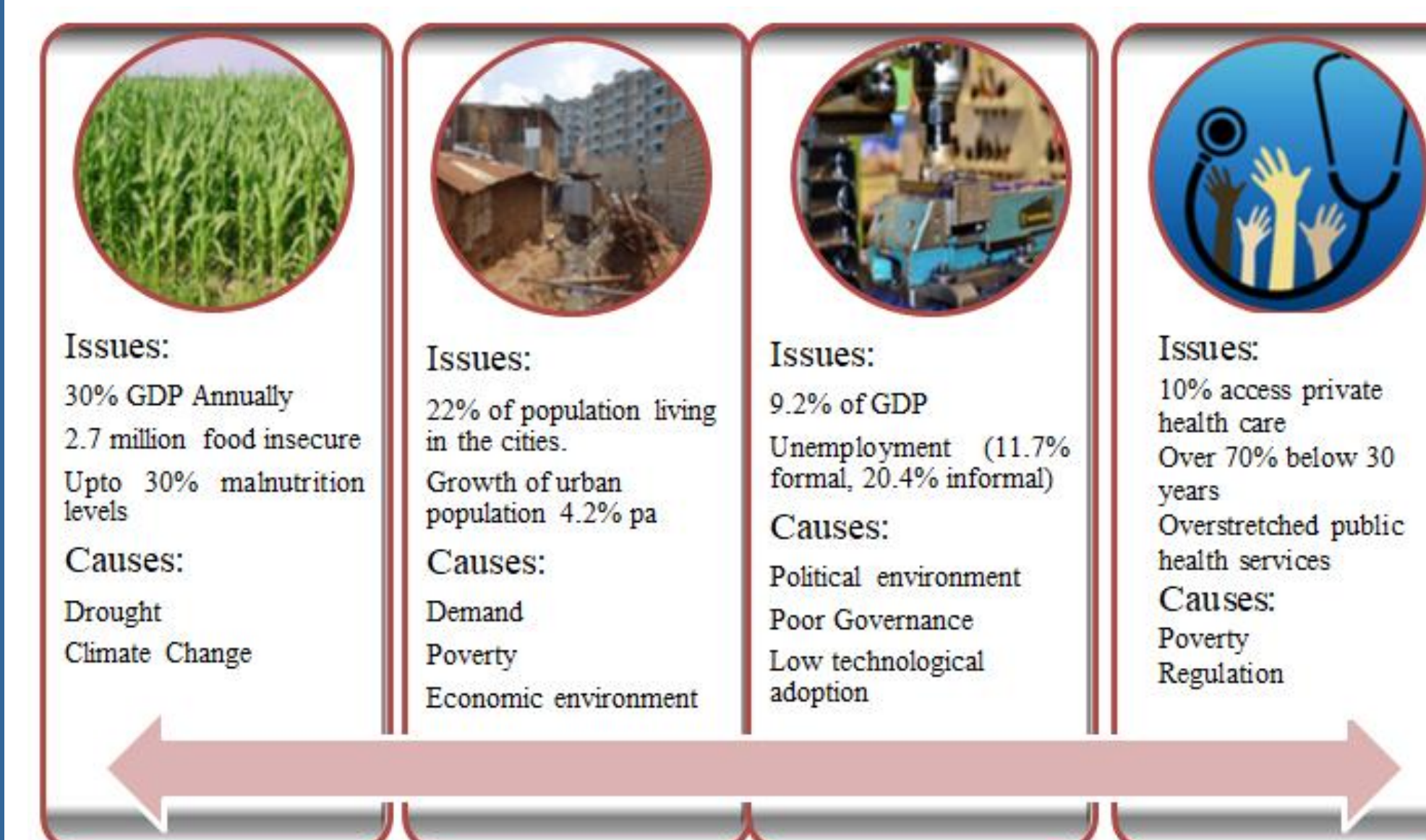
Four namely: Food Security, Affordable Housing, Manufacturing and Affordable Health for All.

Space Science and Technology viewed as an enabler.



Identified National Priority Areas with Space Science and Technology as an enabler in their realization.

Situational Analysis



Analysis of the Issues and Causes of the National Priority Areas.

Features of the 1KUNS-PF

Size:

- 1-U Cubesat (10cm x 10cm x 10cm)

Mass:

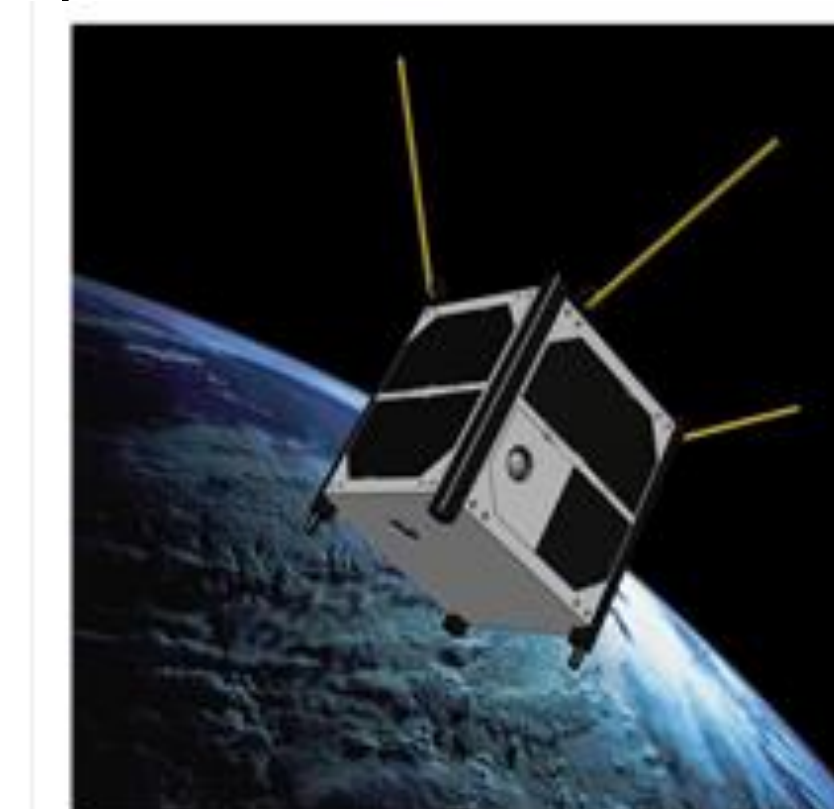
- 1.2kg

Payload

- Two commercial cameras located on opposite axis of the satellite for low resolution images of the Earth
- Audio upload and satellite broadcast receiver based on a mobile phone application.

Purpose

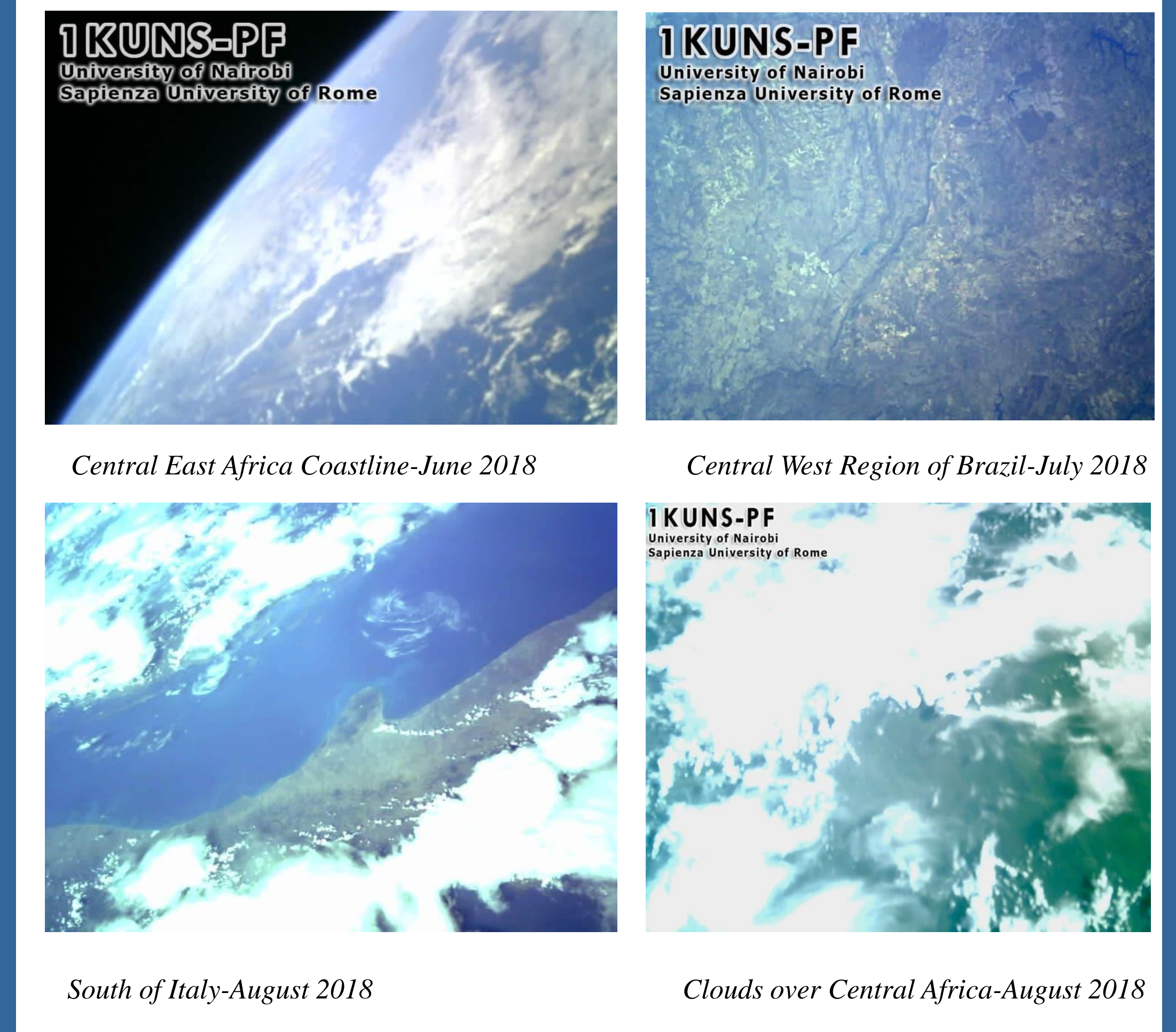
- capacity building in aerospace in Kenya, through the development of a complete space mission



1KUNS-PF.



1KUNS-PF Images 2018: Gold-June; Blue-July; Green-August



Conclusions

Build capacity in space science and technology

Provide an environment for research and innovation

Draw lessons for new missions with a view to address the priority national agenda namely food security, housing, health, and manufacturing.

Promote partnerships and collaborations locally, regionally and internationally

References

Kippra 2018: Policy Monitor, Supporting Sustainable Development through Research and Capacity Building, Issue 9, No. 3.

Wekerle T, Pessoa Filho JB, Costa LEVL, Trabasso LG, 2017:Status and Trends of Smallsats and Their Launch Vehicles — An Up-to-date Review; J. Aerosp. Technol. Manag., São José dos Campos, Vol.7, No 3, pp.269-286

1KUNS-PF 2018:<https://1kuns-pf.ns0.it/>

Acknowledgements

UNOOSA and LOC for financial Support
University of Nairobi for permission to attend the workshop.