

# Utilization of Earth Observation Data in Flood Monitoring and Assessment: GMES - CSSTE Consortium Capacity Building Efforts

by

**'Kunle Oladosu & Ganiy Agbaje**

Centre for Space Science and Technology Education - English (CSSTE)  
Obafemi Awolowo University Campus, Ile-Ife, Nigeria

[kunle.oladosu@arcsstee.org.ng](mailto:kunle.oladosu@arcsstee.org.ng)

[www.arcsstee.org.ng](http://www.arcsstee.org.ng)

# Who we are & What we do



**AFRICAN REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION – ENGLISH (ARCSTE-E)**

**CENTRE FOR SST EDUCATION in ENGLISH**



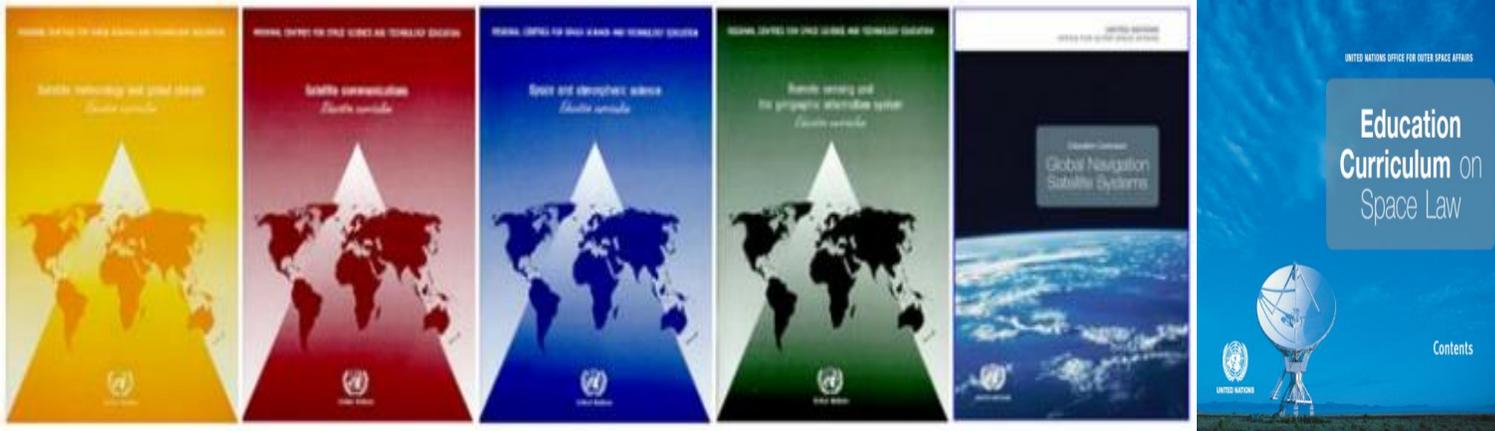
# Post Graduate Diploma Programme (PGD) and MTech (Space Science and Technology) ...**Building Indigenous capacity**

**PGD in 6 options:** RS/GIS, Satellite Communication, Space and Atmospheric Science, Satellite Meteorology, GNSS & Space Law

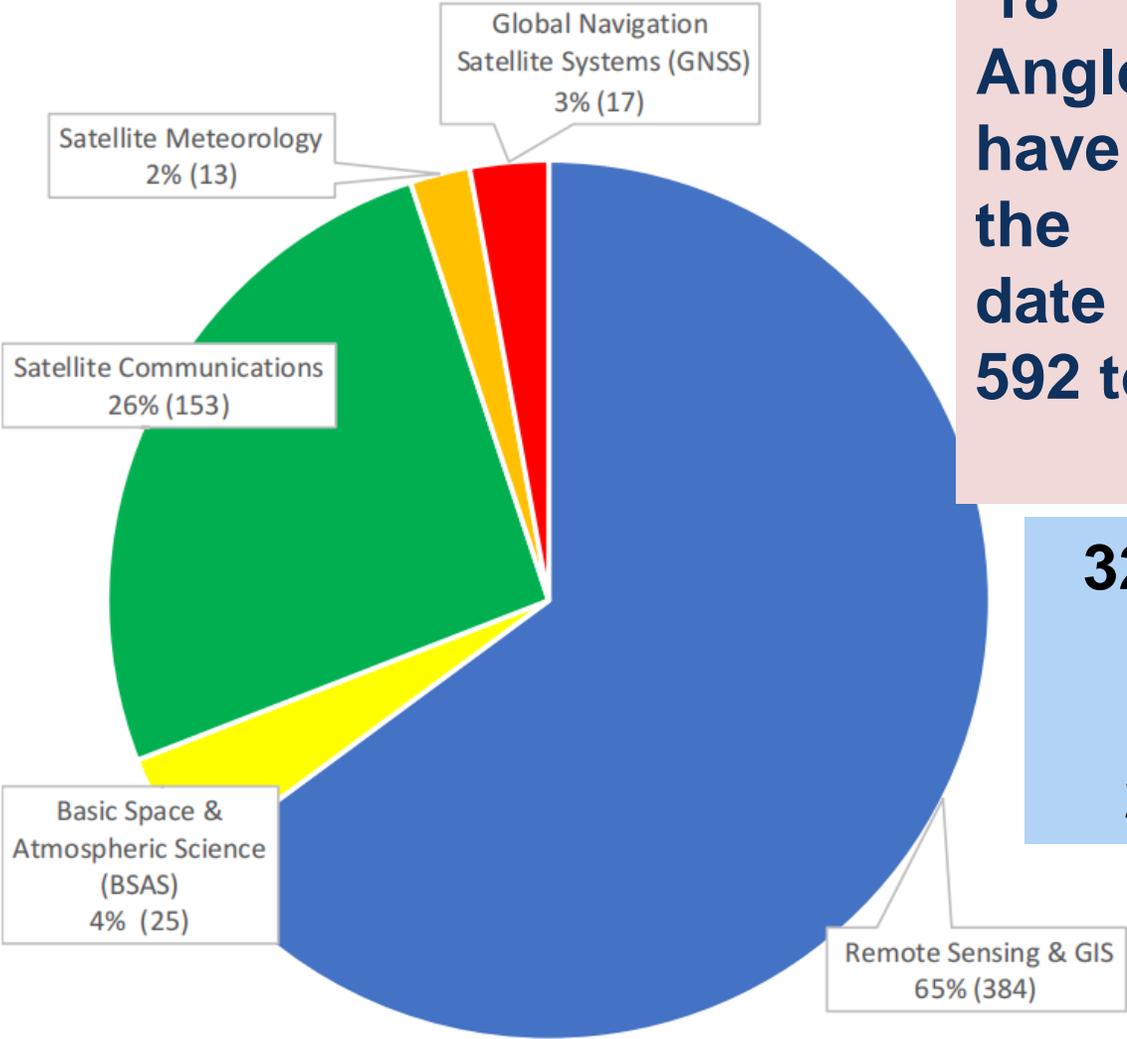
- Duration: **9 months**

**Masters**

- Duration: **18-month MTech. (SSTA)** in five key areas of Space Science and Technology (SST) Education



# Course & Yearly Distribution



**18 of the 24 Anglophone countries have participated in the Programme to date with a total of 592 to date.**

**32 Participants are currently on the Programme for 2021/22 session**

2001	6
2002	3
2003	19
2004	0
2005	24
2006	46
2007	26
2008	33
2009	40
2010	27
2011	33
2012	40
2013	33
2014	41
2015	27
2016	27
2017	22
2018	27
2019	56
2020	62

# Multi-scale Flood Monitoring and Assessment Services for West Africa (MiFMASS) - CSSTE Consortium Project

- **Aim**

- **To enhance the efficiency of flood monitoring, assessment and management in West Africa by providing Earth Observation (EO) based services on near real time basis to disaster management organizations and boosting their human capacity to adapt to these services.**

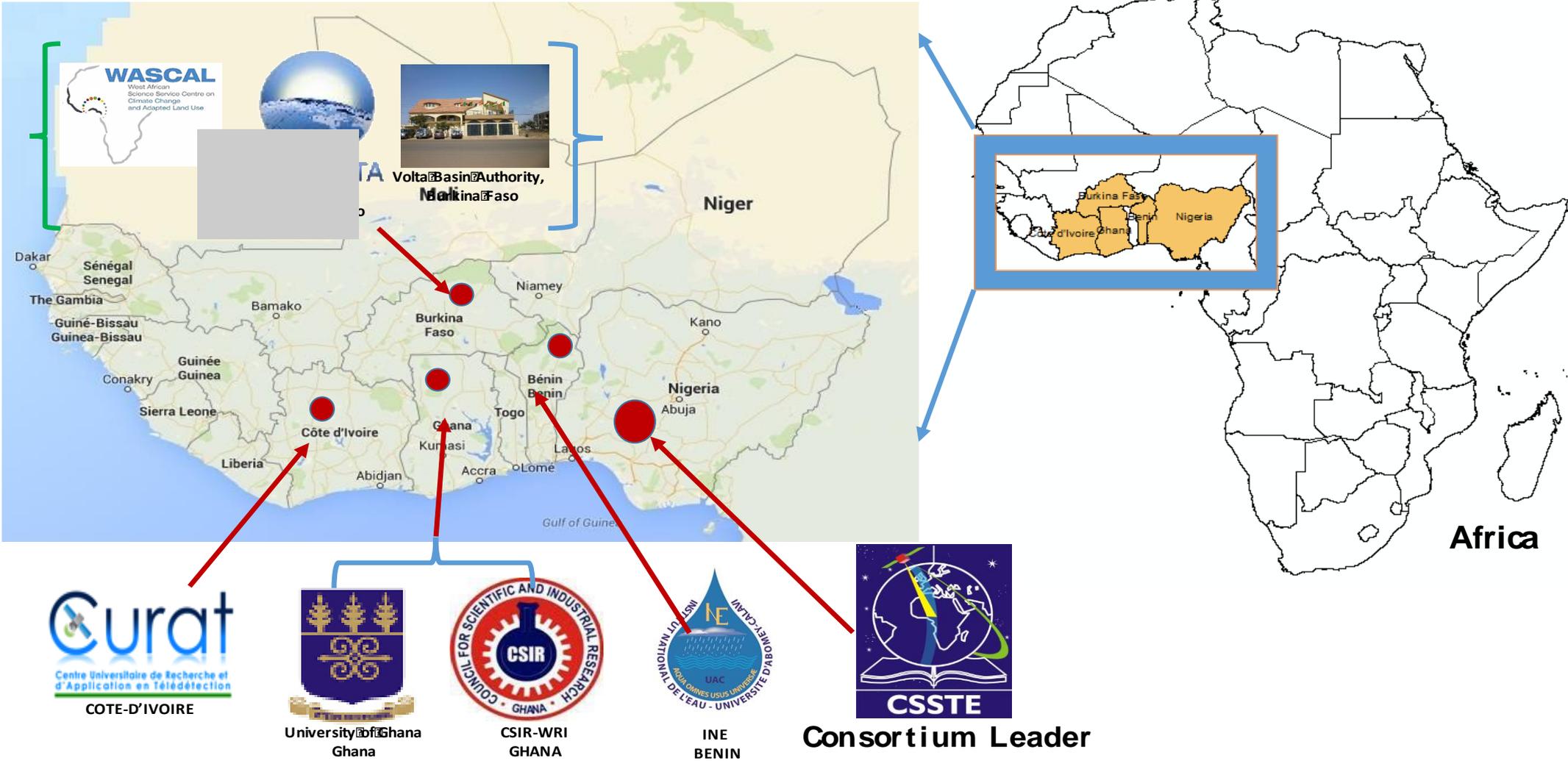
- **Specific Objectives**

- **Establish and updatable flood event database**

- **Provide Disaster Monitoring Organizations (DMOs) timely information before, during and after flood events**

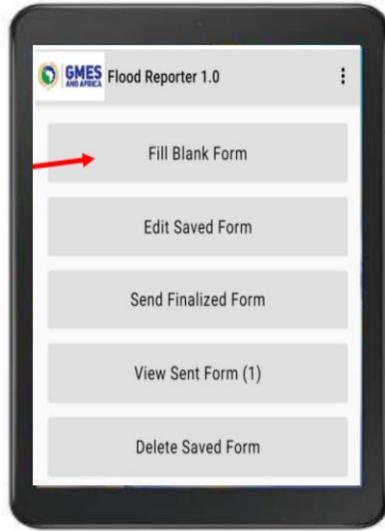
- **Strengthen the capacities of DMOs and other target groups (Farmers, Local residents along flood plains) in the use of Earth Observation data for Flood monitoring, Assessment and management**

# Geographical coverage

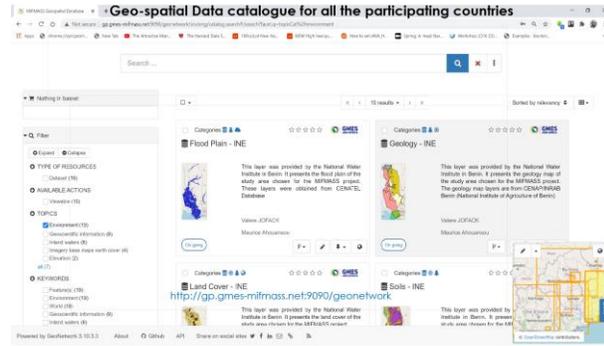


UN/Ghana/PSIPW conference on space for water held in Accra Ghana from from 10- 13 May 2022

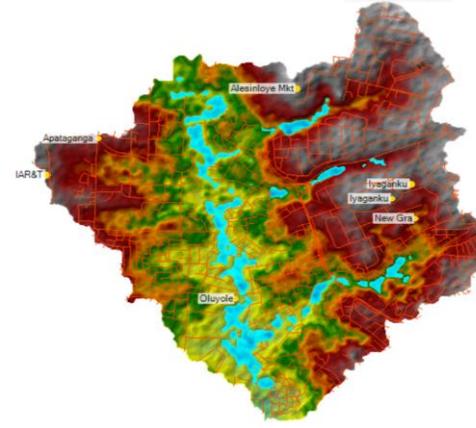
# Products and Services



**Flood Reporter App**



**Geo-spatial database**  
<http://gmes-mifmass.net/index.php/geodata>

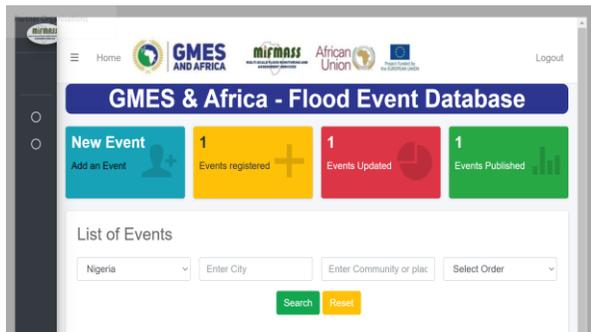


warning (SMS)

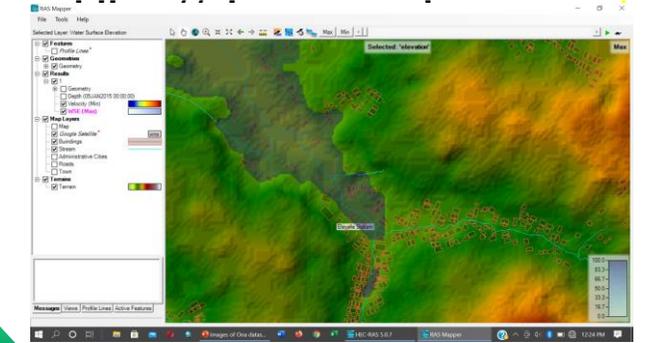
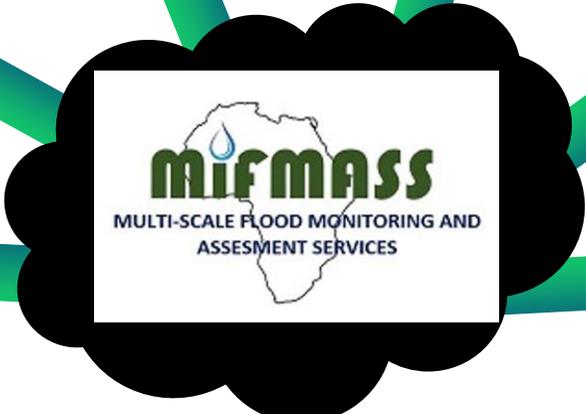
- Over 600 participants from 16 Organizations
- 8 Training workshops
- 6 M.Sc. degrees



**Capacity development**



<http://gmes-mifmass.net/>



**Flood damage assesment & management**

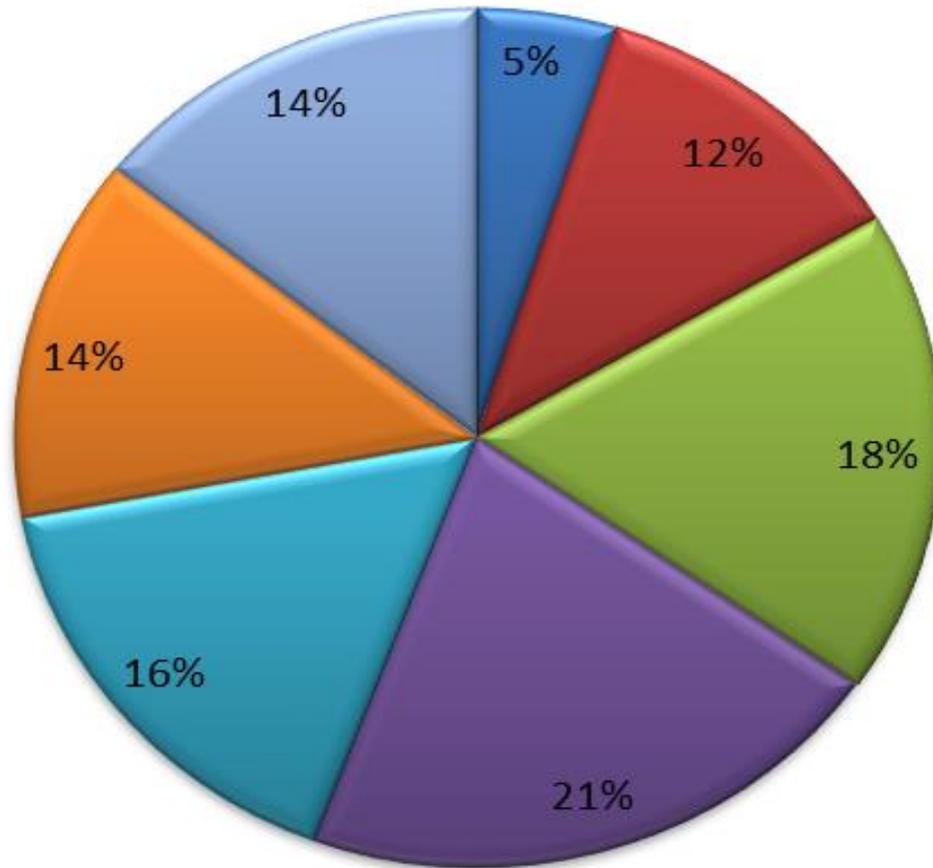
UN/Ghana/PSIPW conference on space for water held in Accra Ghana from from 10- 13 May 2022

# Training Series

<b>S/N</b>	<b>Course</b>	<b>Date Held</b>	<b>Participant</b>	<b>Males/Female</b>	<b>Mode</b>
<b>1</b>	<b>Flood Database Management</b>	<b>26 - 28 Nov., '19</b>	<b>26</b>	<b>21/5</b>	<b>onsite</b>
<b>2</b>	<b>Acquisition and Use of Sentinel 1,2 &amp; 3 Data .....</b>	<b>18 – 19 Aug., '20</b>	<b>62</b>	<b>54/8</b>	<b>Online</b>
<b>3</b>	<b>Flood Monitoring and Forecasting Modelling</b>	<b>9 – 11 Feb., '21</b>	<b>97</b>	<b>78/19</b>	<b>Online</b>
<b>4</b>	<b>API Dev. Inter services into information on mobile apps</b>	<b>23 – 25 Feb., '21</b>	<b>112</b>	<b>92/20</b>	<b>Online</b>
<b>5</b>	<b>Acquisition and Processing of Drone Data</b>	<b>20 – 22 Apr, ' 21</b>	<b>87</b>	<b>71/16</b>	<b>Online</b>
<b>6</b>	<b>Techniques sharing, Val. &amp; disseminating products</b>	<b>12-13 Oct., '21</b>	<b>73</b>	<b>48/25</b>	<b>Online</b>
<b>7</b>	<b>Estation Instal, Operations and Troubleshooting</b>	<b>20 - 21 Oct, '21</b>	<b>76</b>	<b>46/30</b>	<b>Online</b>

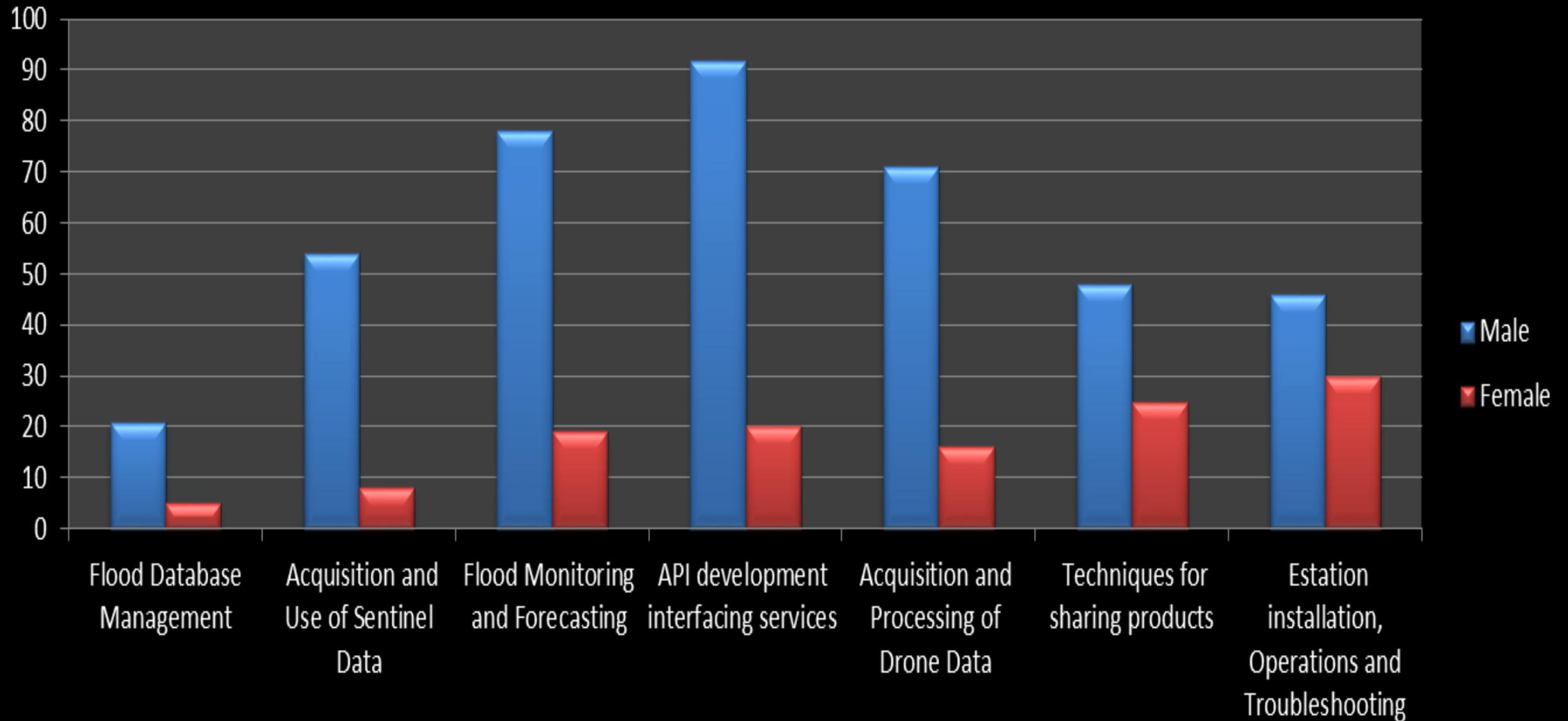
# Participants Attendance

## Participants Attendance at Training

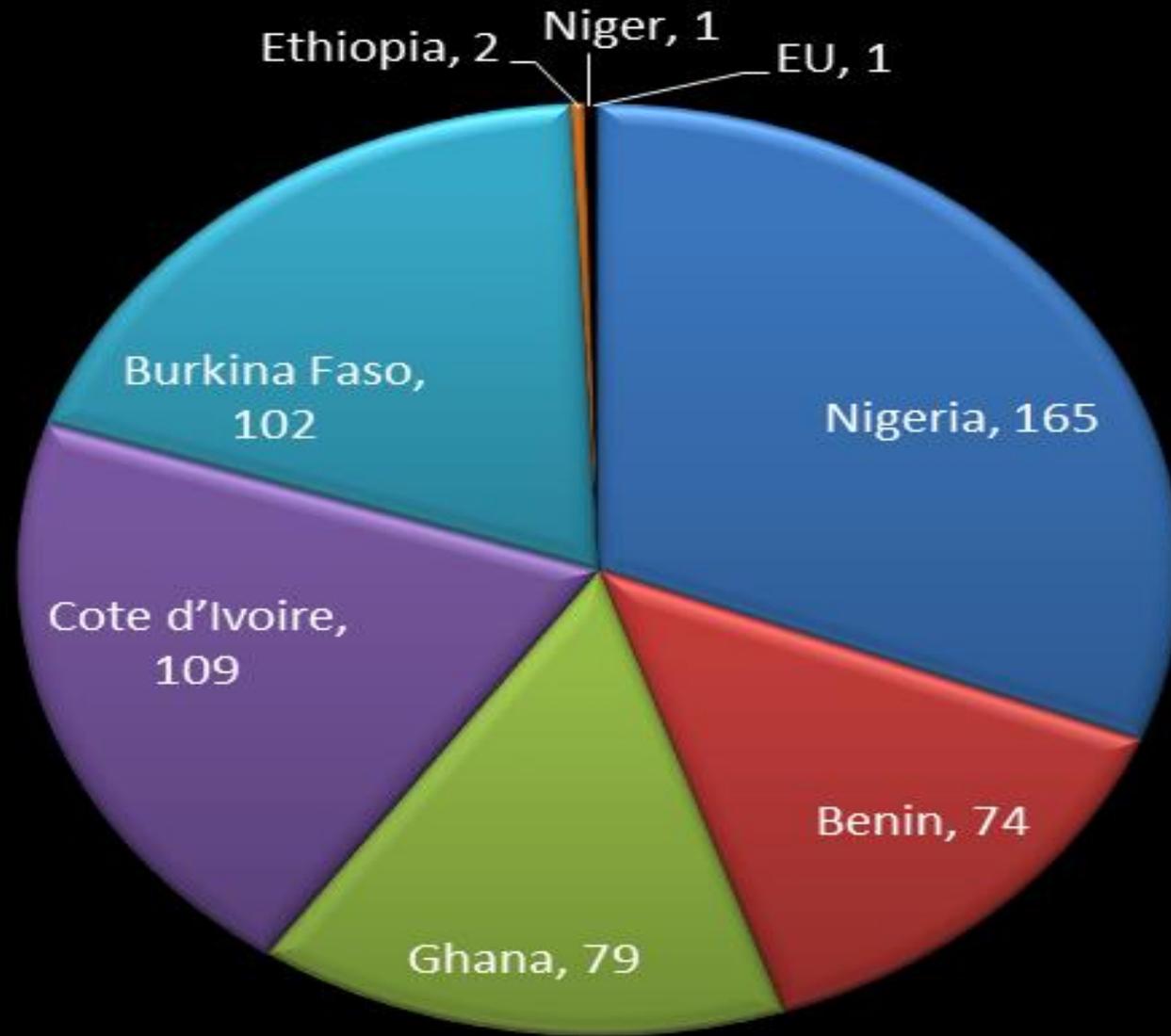


- 1 Flood Database Management
- 2 Acquisition and Use of Sentinel Data
- 3 Flood Monitoring and Forecasting
- 4 API development interfacing services
- 5 Acquisition and Processing of Drone Data
- 6 Techniques for sharing products
- 7 Estation installation, Operations and Troubleshooting

# Gender distribution of Participants



# Country Distribution of participants



# Online photograph during Drone Training

Zoom Meeting

Recording...

View

Adebayo Ojo

csste

Okon Ebeiyamba

Ajiboye Olatunde Ja...

FEYISETAN AYO...

oluwabunmi aka...

Djigbo Félicien B...

NONGANA Gisel...

Solomon Sarkodi...

Elikplim A. Dziku...

millicent obeng a...

Amandine Carine...

Marc YOUAN TA

Jean Danumah

Abdul Rahman A...

Patrice SANOU

iPad de NGORA...

Baka Derving

G6\_Frank T Oblim

Tabsoha Maham...

serah emmanuel

ETTE\_KASSI (RCI)

jean HOUNKPE

Sylvester Darko -...

MAIRO

Unmute

Stop Video

Security

Participants 36

Chat 4

Share Screen

Pause/Stop Recording

Reactions

End

Type here to search

10:51 am  
20/04/2021

# Way Forward...

- **CSSTE Consortium hopes to continue providing training to stakeholders (especially the DMOs), on the use of EO in their activities, and**
- **Provide technical assistance where necessary**
- **Collaborations on specific training especially on GOOGLE EARTH ENGINE would be required to increase the capability of consortium/stakeholders in that vital area.**

# Conclusion

- **In summary:**

**a) 6 Masters students were Trained across 5 Countries.**

**b) Over 600 participants capacity have been enhanced through the short term training in usage of EO data for Flood monitoring across 7 countries**

**c) Robust elearning platform available for continous online training in EO data for Flood monitoring courses to enhance capacity furthermore.**

# Acknowledgement

- **GMES & Africa sponsors are hereby acknowledged for the support of the project**
- **All partners of the CSSTE consortium are acknowledged**

**Thank you for listening**