GMES AND AFRICA

Global Monitoring for Environment and Security and Africa

GMES & AFRICA SUPPORT PROGRAMME :

TRAINING STRATEGY

TABLE OF CONTENTS

ACRONYM DEFINITIONS

Acronym	Definition
AMESD	African Monitoring of Environment for Sustainable Development
EO	Earth Observation
EUMETSAT	European Organization for the Exploitation of Meteorological Satellites
FOSS	Free and Open Source Software
JRC	Joint Research Centre
LMS	Learning Management System
MESA	Monitoring of Environment and Security in Africa
MTAP/PUMA	Meteorological Transition in Africa/Preparation for the Use of Meteosat [Second Generation] in Africa
SAR	Synthetic Aperture Radar
WMO	World Meteorological Organization
ToT	Trainers of Trainers
TAT	Technical Assistance Team

H.E. Prof. Sarah Anyang Agbor, Commissioner for Human Resources, Science and Technology, AUC

FOREWORD

The AU Agenda 2063 has identified African Outer Space as one of its flagship programmes positioned to enable the continent to harness space sciences, technologies, infrastructure, and applications for Africa's growth and transformation, among whose pillars is Earth Observation (EO). Earth Observation is a vital tool for sustainable economic growth, policy development and enforcement, management of the environment, natural resources, etc. and an essential technology in providing evidence-based information that adds value to everyday decisions across communities.

GMES and Africa initiative is a contributing programme to the African Outer Space Flagship on EO domain. It is an AU-European Commission joint initiative utilizing and adapting the European Copernicus Programme data and services to the African context. The purpose of GMES & Africa is to effectively guide integration of EO data, technologies and services in support of socio-economic development agendas in Africa.

Moreover, the Africa's Agenda 2063 prioritizes skills revolution and human capital development underpinned by Science, Technology and Innovation, which is also the bedrock for a viable African space programme.

GMES & Africa Training Strategy addresses the need to develop critical skills and expertise in EO applications, strengthen space-based and in-situ infrastructural capacities of technical institutions in Africa, develop user-centric EO services, and foster communication to ensure effective use of services and products that maximize EO benefits. It also captures the intensification of research clouds at the regional level to strengthen data exploitation skills, and capacity utilization to harness the intellectual capital of trained experts.

Fundamentally, GMES & Africa is mandated to support the African Space Policy and Strategy in the consolidation of Africa's human and institutional capacities to access, process and utilize EO products and services, and in synthesizing them to provide evidence-based information to end users for informed decision making. In the same vein, it is a conduit to leverage space-derived benefits transcending all spheres of governance and tailored to user requirements. This Training Strategy is therefore a strategic mechanism conceived to enable, support and drive the implementation of a nascent continental initiative.

It is my hope and desire that stakeholders will utilize this Strategy to develop and harness the full potential of expertise and capabilities in EO across Africa.

H.E. Prof. Sarah Anyang Agbor
Commissioner for Human Resources, Science and Technology

1. INTRODUCTION

GMES & Africa support Programme is aimed at ensuring that Africa's human and institutional capacities in accessing, processing and utilizing earth observation (EO) products and services are improved, and information is communicated through the right channels to inform decision making throughout the continent. EO deserves continuous training and capacity building of specialists for the following reasons:

- EO technology is dynamic in terms of infrastructure and instrumentation. Novel technologies to develop sensors are continually emerging.
- Data specifications vary with changing instrumentations, hence the need to keep up with the evolving dynamics of EO.
- Processing software are changing or being updated on a continuous basis, and therefore, there is need to update users
- To satisfy dynamic user requirements and ensure effective ingestion in the daily decision making processes.

As a mitigation of the weakness of disconnect between the EO community, policy makers and end users observed over time, the immediate beneficiaries of the GMES & Africa training are:

- The technical team that ensures EO data is processed into information fed through the downstream and upstream chains. These are the implementers at national and regional institutions, universities, research and development institutions, training centers, trainers, African space agencies/institutions and the private sector that ensure information is generated and disseminated to end-users and/or the decision and policy makers in the appropriate formats.

- Decisions and policy drivers i.e. the regional, continental and international organizations that will enhance prioritization and policy dimensions of the programme. It includes African Union Commission, European Commission, national governmental institutions, non-governmental organizations, international organizations such as UN bodies, AfriGEOSS, and AARSE. These contribute to enriching and complimenting capacity development processes by availing inputs from their various initiatives and case studies.

- End users and the communities that depend on water, natural resources and marine and coastal areas for their livelihood are the key beneficiaries of the services.

The above three tiers need to identify with and commit to the programme, and training activities provide a basis to assure that stakeholders equipped with relevant and useful information.

In delivering this mandate, AUC has analysed lessons learned through different predecessor projects, including PUMA (2001-2006), AMESD (2007-2012) and MESA (2013-2017), which inform this current GMES & Africa Training Strategy. Therefore, this Strategy is addressing the following three fundamental questions: WHAT, WHY, WHO and HOW the programme will execute its training mandate. This document explicates the objectives, guiding principles, methodology and expected results of the GMES & Africa Training model.

2.   OBJECTIVE

The objective of this Training Strategy is to strengthen the GMES & Africa Consortia, stakeholders and end-users in using EO science and technology, especially the Copernicus Sentinel series data and images for water, natural resources and marine & coastal areas services development and implementation.

The training seeks to educate users on how to utilize EO products and services for informed decision-making. Furthermore, the Strategy is a tool to ensure Africa consolidates her knowledge and skills where needed in terms of capacities and ground infrastructure, prior to deploying full EO capabilities. To reach the above objectives, all GMES & Africa Consortia including their partners and other stakeholders shall abide by the guiding principles as explained below.

3. GUIDING PRINCPLES

The following principles will guide implementation of the GMES & Africa Training Strategy:

- Training modes – Consortia and stakeholders should deliver the training activities through the following three modes: Online, Classroom, and On-the-Job.

- Trainings to be conducted through Academic institutions – Except for On-the-Job, Consortia are to make all efforts to ensure trainings are conducted through their partner Universities or Research Centers. This is to create an avenue for long term capacity building. The consortia should endeavor to establish research clouds in their regions.

- Training of Trainers (ToT) – The training model is focused on training trainers who will support Consortia. And Consortia are responsible for regional and national trainings, which are about training stakeholders and end-users as specialists and thematic experts in various fields.

- Building on the existing expertise – GMES & Africa places emphasis on the utilization of existing capacities, as it seeks to strengthen additional specialized skills through training.

- Intensive use of Information Technology, especially the integration of ICT with Earth Observation – In order to enforce value addition to products and most importantly to create an innovative medium of reaching end-users, EO and ICT should be integrated and considered part of the service delivery cycle. Implementers are encouraged to leverage on emerging technologies to enrich service delivery. Consortia should liaise with ICT institutions within or without their regions to leverage on high performance computing capabilities. Moreover, the use of online platforms and virtual classroom environments to conduct trainings is encouraged.

- Use of Free and Open Source Software (FOSS) – Institutions are strongly encouraged to make use of the free and openly available software instead of purchasing other expensive licenses.

- Private Sector – The African Private Sector's involvement is required since it is a catalyst for providing specialized and on the job training. This is especially for new application development focused on integration of EO with ICT, communication and navigation, as well as real-time mapping. Their involvement brings different experiences in capacity building and collaboration in Africa.

- Raising Awareness – Training efforts should seek to serve the needs of end-users. Services should be demand-driven, which means they should be developed and delivered to satisfy stakeholders and end-users needs.

4.   METHODOLOGY

GMES & Africa Delegation Agreement requires AUC to coordinate training and capacity development activities at the continental, regional and national levels.   However, it should be clear that AUC is only implementing the Continental training. The regional and national trainings are the responsibilities of the Consortia through their Grants. Although AUC does not directly implement the regional and national trainings, it plays a coordination and monitoring role and sets some ground principles to be observed across all levels of training, considering that it is the Delegated Authority for issuing and implementing Grants.

4.1_ Overall training development and implementation approach

The sequence in Figure 1 below is expected throughout the development and delivery chain of the training courses. Indeed the approach is made up of five key steps: Needs Assessment, Course Identification and Curriculum Development, Training Plan Execution, Review and Evaluation, and Revision and Improvements. The approach will not be limited to only individual curriculum development, but also the targeted applications' competence to ensure that no limiting factor hampered the EO into the information flow, understanding and analysis.
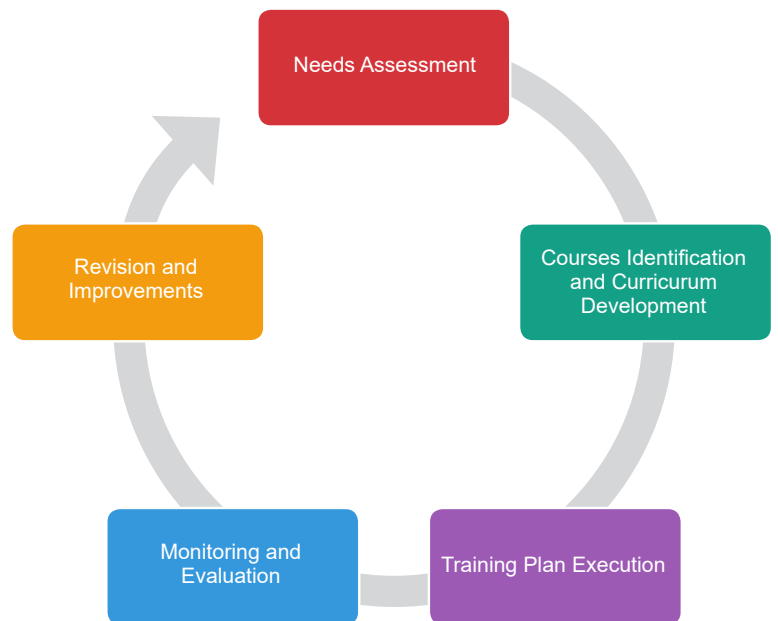
Figure 1: GMES & Africa Service Development Cycle

4.1.1 Training Needs Assessment

In order to develop the right curriculum, a Training Needs Assessment (TNA) must be conducted. The exercise is undertaken on a comprehensive basis in each of the implementing consortia. The TNA informs the training programme, curriculum and courses to be undertaken. The assessment leverages on the due diligence (capacity assessment undertaken under GMES & Africa) and the outcomes of the EO audit exercise, which is carried out under the auspices of the African Space Policy and Strategy.

The needs assessment identifies for each application and at each of the three levels (decision makers, technical actors, and end-users) the targeted clients in order to identify their information needs. These are essential information requirements according to the mandate of the beneficiary in question, the frequency and format of delivery, language, packaging, etc.), as well as their capacity and the resources they can mobilize to ingest and valorise EO information. The training plan will be structured along the project's life cycle to make sure that the targeted applications are fully understood and integrated by the end user.

AUC has undertaken a Due Diligence exercise, which is an analysis of the selected Consortia's capacity (in EO, Finance and Procurement) as well as their readiness for implementing GMES & Africa. This due diligence exercise is an opportunity to assess the strengths, weaknesses, opportunities and threats (SWOT) of the training activities within the Consortia. The findings from the SWOT analysis (Figure 2) will be incorporated in the Training Needs Assessment that informs the training plan. It is also understood that despite the efforts, the continental EO mapping exercises may not completely depict the real situation on the ground. It is therefore proposed that a second Capacity Assessment exercise be carried out in at the end of year 1 or in mid-year 2 of implementation. The outcome of this exercise will lead to further improvement of the capacity development and utilization component while the Programme is still running.

4.1.2 Course Identification and Curriculum Development

As a first assessment (based on the MESA experience), the courses anticipated are categorized into three main classes: (1) Supporting Courses (Infrastructure, Grant Management System, IT and System Administration), (2) Earth Observation Courses (Generic and services oriented), and (3) Communication and Engagement Courses (for policy makers, stakeholders and end-users).

The courses may run in parallel or as stand-alone courses – which will be further elaborated in the training schedule.

Across the three tiers, curricula development is a consultative process involving different stakeholders. Academic institutions will be deeply involved in developing the curriculum for each course, with a view to integrating some of the courses into their respective curricula. From the beginning, Consortia are encouraged to establish working relations with academic institutions and research centres with the intent to consolidate courses into the academic institutions' curricula. This serves as the basis to ensure sustainability through long-term training as opposed to the project approach, whilst materials and data continue to benefit a wide range of users. The consultative process involves both the Consortia and their networks, and curriculum validation is inclusive of all the stakeholders to make it as accommodative as possible. The MESA Training Curricula serve as the baseline and reference point while developing the curricula. This approach is observed across all the three tiers.

4.1.3 Training Plan Execution

The training will be done on continental, regional, and national scales. It will focus on water and natural resources, as well as marine and coastal areas services. Three approaches will be deployed in delivering training.

a) Distance Learning

A huge percentage of the curriculum will be delivered by Distance Education through online platforms such as the LMS. The LMS has been inherited from MESA and tailored to accommodate more plugins to ensure better navigation and management of activities. Training implementers are encouraged to utilize cloud-computing capabilities to conduct trainings. This further requires developing training kits for each course category and allowing unrestricted downloading of bulky data from online platforms (similar to the TIGER training approach). The strategy also emphasizes use of webinars and Massive Open Online Courses (MOOCs) to deliver distance training. Consortia are allowed to develop their independent LMS to deliver the trainings, but these should be mirrored and linked to the continental one.
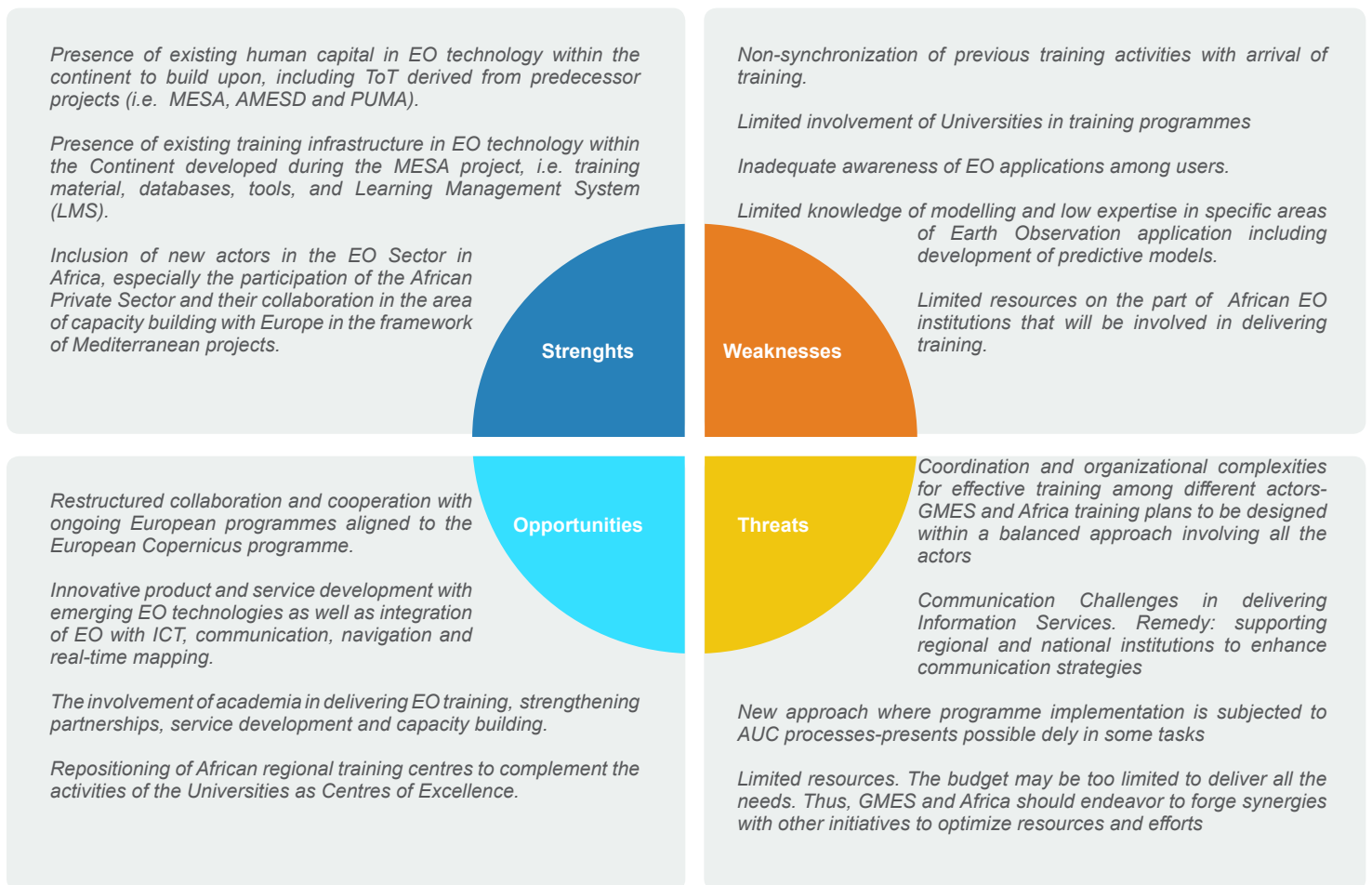
Strengths

Presence of existing human capital in EO technology within the continent to build upon, including ToT derived from predecessor projects (i.e. MESA, AMESD and PUMA).

Presence of existing training infrastructure in EO technology within the Continent developed during the MESA project, i.e. training material, databases, tools, and Learning Management System (LMS).

Inclusion of new actors in the EO Sector in Africa, especially the participation of the African Private Sector and their collaboration in the area of capacity building with Europe in the framework of Mediterranean projects.

Weaknesses

Non-synchronization of previous training activities with arrival of training.

Limited involvement of Universities in training programmes

Inadequate awareness of EO applications among users.

Limited knowledge of modelling and low expertise in specific areas of Earth Observation application including development of predictive models.

Limited resources on the part of African EO institutions that will be involved in delivering training.

Opportunities

Restructured collaboration and cooperation with ongoing European programmes aligned to the European Copernicus programme.

Innovative product and service development with emerging EO technologies as well as integration of EO with ICT, communication, navigation and real-time mapping.

The involvement of academia in delivering EO training, strengthening partnerships, service development and capacity building.

Repositioning of African regional training centres to complement the activities of the Universities as Centres of Excellence.

Threats

Coordination and organizational complexities for effective training among different actors-GMES and Africa training plans to be designed within a balanced approach involving all the actors

Communication Challenges in delivering Information Services. Remedy: supporting regional and national institutions to enhance communication strategies

New approach where programme implementation is subjected to AUC processes-presents possible dely in some tasks

Limited resources. The budget may be too limited to deliver all the needs. Thus, GMES and Africa should endeavor to forge synergies with other initiatives to optimize resources and efforts

Figure 2: Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis

b) Classroom trainings

This is a blended approach. Classroom trainings involve convening trainees from different institutions and/or regions in a training facility to conduct courses relevant to all the participants. Potential trainers are then identified to undergo the Training of Trainers (ToT) exercise. The trained personnel are required to deliver courses in their respective institutions. A multi-stage approach is applied to assess trainees either through the LMS or any other mechanism. The institutions are asked to nominate experts (Guidelines for nomination procedures to be defined) in the targeted fields. Trainees travel from their various locations to a designated training facility. Training is delivered in English and/or French.

Academic institutions and Centres of Excellence with substantive experience are involved in the delivery of training courses. Academic institutions of Consortia become the point of contact for the development of curricula and laboratories to test the feasibility of deploying training courses on long-term basis. A network of all the involved academic institutions from the five regions is set up, for the purpose of facilitating dialogue and standardizing curricula as well as course delivery.

GMES & Africa has to ensure that enough pool of efficient trainers in English and French are available, by utilizing the existing database and training additional ones if need be. At least each Consortium will have a point of contact ToT who will be contracted on a need basis. At the lowest level, the national experts train the end-users. Training requirements vary from one region to the other, and follow-up actions are made in participating countries upon the setting up of national networks.

c) On-the-job Training

On-the-job training is about training stakeholders and end-users in addressing concrete work-related issues in a real work environment. An institution may express the need to have its staff trained on the job. In this case, trainers are deployed to the institution to conduct the exercise. Only the trainers are obliged to travel and meet with the staff at their work stations. The institution in question must have all the reliable facilities required to deliver the courses (computers, software, internet, etc.). The on-the-job training component will also be ensured by JRC, which plans to invite around 20 experts for the customization of the e-station software in support of new applications. Staff from Consortia are hosted at JRC (Italy) for this activity, for an indicative period of 2 weeks. In addition, the cooperation and involvement of African EO and geospatial and allied institutions is sought for the on-the-job-training, including for the sharing of best practices.

d) Training Delivery Standards and Schedule

Curriculum standardization is essential in observing quality assurance benchmarks for courses. This task is mainly undertaken by the network of academic institutions, in collaboration with implementing Consortia, stakeholders and end-users. The intention is not only to attract academic institutions in hosting courses on a long-term basis, but also to ensure that the courses offered are standardized across the EO sector. So the idea is to make the curriculum as precise and interoperable as possible. It is required that each course be followed with certification as evidence that a student has undergone a specific course in its entirety. Standardization guidelines will be developed once the stakeholders convene and agree.

The training must be delivered in a timely manner to allow Consortia, end-users and other stakeholders to acquire enough knowledge to be able to deliver on their specific services. Therefore, the balance and sequence between service development and implementation is a key factor for success. An integrated training plan and schedule will be developed for courses to be conducted at the continental level and in different regions and institutions. Improvements on the training plan are foreseen on regular basis.

4.1.4   Requisite Infrastructure

Adequate infrastructure is necessary for facilitating training delivery. The MESA project in particular encountered several difficulties in executing training activities because training is dependent on infrastructure. In some instances, the courses were prepared and trainings planned only for the trainers and students to find no e-stations in place on the scheduled dates. These are some of the bottlenecks that should be addressed to ensure a successful training programme. The e-station contractor should be ready to work in tandem with the Training Officer to mitigate the challenge. Mechanisms and procedures have been developed to guide the transition of MESA infrastructure to GMES & Africa. Receiving stations are one of the most important segments of the infrastructure, and within the transition plan is a stocktaking exercise to analyse three elements: Location and ownership of the stations, status of the stations, and maintenance needs. This study will inform the right decision in the deployment of new stations.

The MESA Training Reference Station (containing an antenna and 3 PCs) is handed over to GMES & Africa to facilitate the training activities. The LMS (subscription, hosting, content migration, e.t.c) has been transferred to GMES & Africa. The training budget covers part of the maintenance and running cost of the LMS including, transfer and installation of systems to newly identified locations, hardware and software installation, maintenance and upgrading, and internet connection fee. Additional tasks include the provision of adequate space to install servers and space for documentation and storage. Routine maintenance of the LMS is also necessary. GMES & Africa Support Programme has initiated an integrated website to host all the information and data pertaining to its implementation. This implies that a training webpage is included to accommodate the LMS.

GMES & Africa has weighed between the options of continuing with the MESA training centres that were provided through WMO facilities, and identifying new training centres. In administering the Call process, it was required that each consortium accommodates at least one academic institution or university as an active partner. Therefore, the most appropriate model is to build a network of academic institutions from among all consortia and using it as a vehicle for conducting trainings.

Furthermore, academic institutions are involved in developing the curricula, which is also a remedy in ensuring that trainings are long-term instead of short-lived. This new pathway has cost implications in terms of capacitating the new centres as opposed to the practice in MESA. Training centres have to be concluded early enough, especially giving priority to North Africa and Consortia that did not participate in the MESA initiative, which did not benefit from e-stations.

4.1.5 Budget and Resources

Although budget constraints remain the biggest threat to curriculum development and implementation, a sizeable portion of the regional and national trainings is charged on Consortia's budgets from the Grants. The continental training will be funded by AUC through the GMES & Africa Support Programme coordination budget.

The budget for training is used for hiring trainers and experts, developing and implementing curriculum, purchasing appropriate tools and equipment, and

covering trips and related costs for the trainees to efficiently attend and participate in training sessions. All GMES & Africa stakeholders and partners will provide resources in their various roles and responsibilities, as highlighted in Annex 1.

4.1.6 Training Risks Assumptions and Mitigations Measures

Table 1. below highlights the risks, assumptions as well as their mitigation measures

Table 1: Training Risks & Assumptions and their mitigation measures

Risks & Assumptions	Mitigation measures
Academic and other institutions collaborate in hosting trainings sessions and contribute to developing curricula.	Begin early negotiations with academic and other institutions to host training sessions.
Implementing institutions have substantive human and infrastructural capacities commensurate to their experiences in the implementation of EO projects.	Trainings to be conducted on a continuous basis in order to bolster human capacities at the Consortia.
Composition of consortia has already addressed the need for collaborative efforts in implementing the project.	Consortia to establish regional platforms for engagement with institutions in their consortium in order to harmonize working relations and synergies. Ensure continued dialogue with policy makers and end users to bridge the gap of communication.
Institutions have well-established networks of communication to channel their products to policy makers and end users.	

4.1.7   Sustainability Measures

GMES & Africa is building upon its existing infrastructure, which provides a platform for the sustainability of technical resources, hardware and software. The LMS MESA is restructured to improve the execution and management of Distance Education and Onsite courses. Training plans are delicately designed in anticipation of capacity building efforts for the various actors of selected consortia, while creating networks oriented on engagement and commitment. Less emphasis is placed on the delivery of generic courses, with focus rather on the utilization of Training of Trainers (ToT) at the established regional and national centres for increased capacity exploitation. A new model will be crafted to ensure that the infrastructure needed to conduct training arrives prior to the delivery of the training. Furthermore, GMES and Africa will strengthen collaboration with different European stakeholders such as the European Space Agency and EUMETSAT for sentinel data dissemination, and JRC to keep apace with dynamic EO environments that require frequently updated trainings in various EO disciplines. At the centre of this training scheme is "Continentalization" as well as cross-fertilization of services, and skills transfer as opportunities for capacity development.

4.2   Monitoring and Evaluation

The training should ensure that regional and national capacities (human, technical and managerial) for African public institutions and private sector to generate and apply EO-based information for Natural and Water Resources as well as Marine & Coastal services are enhanced. Monitoring and evaluation of the GMES & Africa Training activities are guided by the following outputs as agreed in the description of action of the Agreement between AUC and the European Commission.

a) AUC ensures that RICs establish cooperation frameworks with Universities and work with the Pan-African University (PAU)

This is achieved through creating a network of Universities in each consortium/region to ensure that the training is sustained and thereby contribute to overall EO goals as outlined in the African Space Policy and Strategy. The AUC organizes 2 meetings with Universities and consortia to increase cooperation on training and research training. Memoranda of understanding (including standard guidelines and deliverables) with the participating universities should be concluded. It also includes the establishment of cooperation frameworks with specialized Regional Centres for Space Science and Technology Education affiliated to the UN (in Nigeria, Morocco etc.).

b)   Conduct capacity development on Earth Observation for integrated decision-making

AUC develops a strategy to transfer the MESA components (including training) to GMES & Africa. It also identifies crosscutting needs in the continent and undertakes the development and implementation of the continental training strategy and plan. AUC coordinates with Consortia and RECs' stakeholder training workshops, and ensures that the network of universities and other stakeholders deliver on course content, validation and delivery. AUC also ensures that Consortia are provided with technical support to update existing training course material and develop material for new courses, where needed.

c)   Establishment of virtual networking platforms

AUC procures designing and development of the system, purchase of hardware equipment and maintenance. In addition, validation workshops with potential end-users and stakeholders will be organized.

d)   Facilitating continental and regional policy and priorities alignment

AUC coordinates and monitors the GMES & Africa training activities and makes sure that these activities are empowering and strengthening Consortia, stakeholders and end-users to provide relevant EO information, which support policy decision making process as well as various operational and application issues. Since the services proposed by the Consortia are supposed to address regional and national issues, the monitoring and valuation process should confirm that EO information and products are making a positive difference.

The four deliverables above are the Key Performance Indicators upon which GMES & Africa Training performance is measured. A monitoring and evaluation approach will be developed. The Training progress reports will be available on a half-yearly basis to allow enough time for remedies and corrections. The half-yearly progress reports (narrative and financial) serve as the first basis for Monitoring and Evaluation of performance. Evaluation will benchmark the reports with outputs above and specific commitments elaborated in the Description of Action in the delegation Agreement.
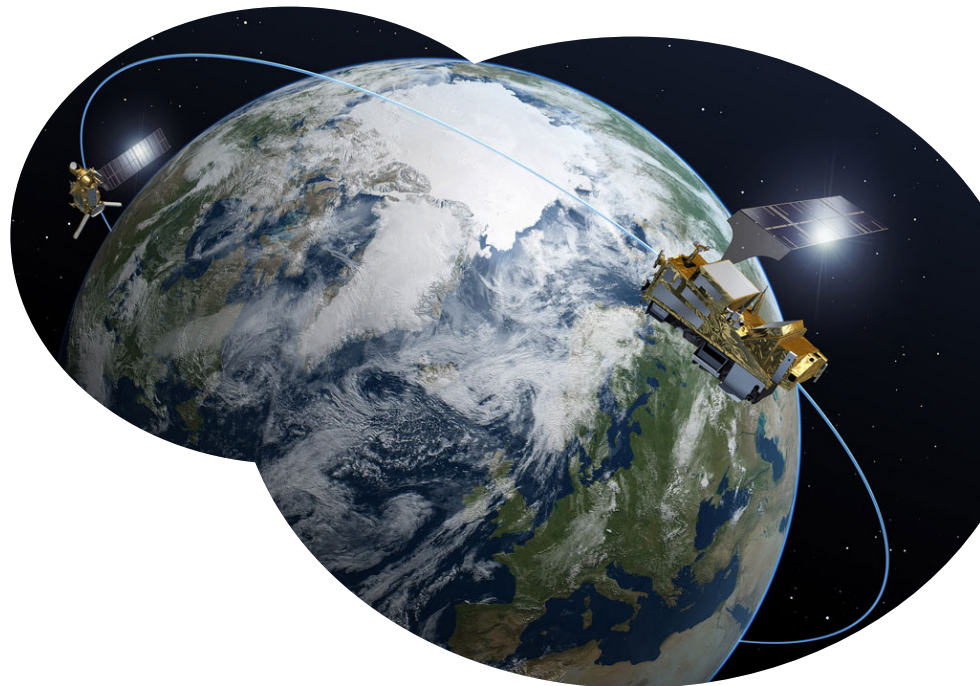
5. EXPECTED RESULTS

All Consortia EO infrastructures, tools and equipment are fully operational and efficiently used by very qualified and well-trained people. High quality Services are delivered as planned in a timely manner with total satisfaction of the stakeholders and end-users.

There are 13 grantees of the GMES & Africa Support Programme in the five regions of Africa. At the continental level, GMES & Africa will offer 4 training sessions a year: 1) Infrastructure and Data; 2) EO applied to water and natural resources service; 3) EO applied to marines and coastal areas service; and 4) Communication and engagement of stakeholders and end-users. For each continental training session, each Consortium will provide two candidates to be trained as trainers at the regional and national levels. Therefore, for the continental training, a total of 104 trainers will be trained per year at the continental level. Therefore, 312 trainers are to be trained over the 3 year-duration of the GMES & Africa Support Programme.

At the regional level, each Consortium will offer at least 3 training sessions a year: 1) Infrastructure and Data; 2) EO applied to the specific service developed by the Consortium (water and natural resources service or marines and coastal areas service); and 3) Communication and engagement of stakeholders and end-users. Each Consortium is made up of at least five 5 partners. It is expected that each partner will provide 3 trainees per regional training session, with at least 15 trainees per session for a total of 45 trainees a year per Consortium. The total regional and national trainees for all 13 Consortia will be 585 trainees per year. For the duration of the GMES & Africa Support Programme, 1755 technical experts, stakeholders and end-users will be trained at regional and national levels.

ANNEX 1

Annex 1: Roles and Responsibilities of Stakeholders

Institution	Responsibilities	Remarks
AUC	• Coordinating Training activities (continental, regional and national • Conducting Training needs assessment (in proper consultation with Consortia) • Designing continental the Training Strategy in consultation with stakeholders • Designing the continental Training Plan • Developing continental Training Courses based on TNA • Developing continental Training Curricula based on approved courses • Hiring Trainers for the Continental Courses • Implementing the Continental Trainings • Ensuring coordination of the Network of Universities • Concluding agreements with training institutions • Ensuring the transfer of MESA training infrastructure and components including LMS, Video-conferencing, Trainers and Trainees Database, Training Reference Station, etc. • Installation and maintenance of the receiving stations (by a contractor • Training the RICs on installation and troubleshooting the stations (by a contractor)	AUC will sub-contract some of the services such as Continental Trainings, but remain accountable for their execution. The contractor is expected to train Consortia on the installation of e-stations including troubleshooting aspects to ensure Consortia continuously use the stations without major disruptions
RECs	• Continually monitoring regional deliverables to ascertain that trainings are answering to the service delivery that are applicable to regional policies and programmes	
JRC	• Ensuring that e-station software are maintained and are operational • Software configuration of MESA stations • Training on use of the e-stations (materials and modules for ToT) • On the job training (customization to the thema) • Providing trainers to develop curricula	JRC is mainly accountable for the software of the stations. Where needed, additional trainings may be arranged in the course of the training implementation.
EUMETSAT	• Conducting additional trainings on weather forecasting applying PUMA stations if necessary • Make available EUMETCast Training Channel, for distribution of training resources • Trainings on the use of EUMETCast system and operation	
ESA	• Trainings on use of cloud computing, storage, processing and archiving using the Thematic Exploitation Platform approach	JRC is mainly accountable for the software of the stations. Where needed, additional trainings may be arranged in the course of the training implementation.
Space Agencies	• Ensuring data provision for implementing institutions • Where applicable, assisting in trainings related to data acquisition or processing	
Academic Institutions	• Contributing to developing the training curricula for each course • Standardizing and validating curricula • Providing a platform for deploying training courses on a long term basis • Contributing in modelling and research related aspects of the programme	
Consortia	• Liaise and collaborate with decision makers to ensure that information generated reaches the policy makers • Liaise with policy makers to ensure they make the right decisions using evidence-based or value-added EO information to ensure the well being of user communities • Developing and implementing regional training strategy based on specific training needs of the region	

GMES & Africa Support Programme,
Department of Human Resource Science & Technology- African Union Commission , P. O. Box 3243, Addis Ababa, Ethiopia.
Tel: (251) 11 5517700 , E-mail: gms@Africa-union.org, Website: www.gmes.africa