



Earth Observation for
THE AFRICA WE WANT



**GMES
AND AFRICA**

Global Monitoring for Environment
and Security and Africa
(GMES & Africa)



A Programme of the African Union (AU), implemented by the Department of
Human Resources, Sciences and Technology (HRST) and supported by the European Commission (EC)





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FOREWORD

Earth Observation and the monitoring of Africa's abundant natural resources are important for conserving the welfare of current and future generations. Currently, there is a need to address the huge gap in terms of the requisite infrastructure and critical human resources at all levels to fully realize the potential benefits that would accrue from the sustainable use and conservation of these resources.

The African Agenda 2063 and African Space Policy and Strategy espouse a continent that is not only a consumer in the global space arena, but also a key driver of efforts to harness space technologies and applications, including Earth Observation – for sustainable development. In Africa, we continue to be confronted with challenges of climate change and variability, natural disasters and environmental degradation, which have negatively impacted agricultural production and economic productivity.

As a mechanism to provide information to policymakers, scientists, businesses and the public on a real time basis, GMES and Africa will help address the above challenges. Resource mobilization and capacity building through long term training, as well as technology transfer, are also priorities under GMES and Africa that will bring enormous benefits in terms of skills acquisition for Africa's labour force.

As a joint AU-EU Earth Observation programme, GMES and Africa evokes and addresses our

everyday concerns; from climate change, to water, energy, natural resources, the environment, and security. Therefore, we must take full and compelling ownership of this noble initiative, and drive its implementation process to success.

This publication is a foundational blueprint providing insightful information into the GMES and Africa framework – from its conceptualization to its design and implementation. I therefore invite you to dig deep into the document, to understand and imbibe the context of a program intended to optimize the use of Earth Observation for the Africa We Want.

*Professor Sarah Anyang Agbor
Commissioner for Human Resources,
Science and Technology
African Union Commission*



BACKGROUND

The Global Monitoring for Environment and Security and Africa (GMES & Africa) initiative is the crystallization of the longstanding cooperation between Africa and Europe in the area of space science & technology, which is one of the key priorities of the long-term EU-Africa Joint Strategy. The Maputo Declaration of October 2006 provided the necessity for the EU-Africa partnership to confirm the commitment to avail European infrastructure and facilities, under the Copernicus programme to Africa, Caribbean, and Pacific (ACP) countries. This commitment led to the launch of GMES & Africa process in Lisbon, Portugal, on 7th December 2007 during the 2nd EU-Africa Summit. The rationale of this long-term and strategic cooperation is to address the growing needs of African countries to access and use Earth Observation (EO) data for the implementation of sustainable development policies on the continent through the integration and deployment of African requirements and needs in Copernicus Services. This will, in the long run, enable the two continents to jointly solve and address global challenges and contribute to the attainment of their overarching development goals that include the AU agenda 2063 and the Sustainable Development Goals.

The Action Plan for GMES and Africa initiated a long-term structured dialogue between Africa and Europe on EO systems to response to global needs, to manage the environment, understand and mitigate the effects of climate change and ensure civil security by providing information to policy-makers, scientists, businesses and the public on a real-time basis. GMES & Africa will promote the development of local capacities, institutional, human and technical resources for access to and exploitation of EO-based services on an operational basis for sustainable development in Africa.

Nine thematic chapters were identified and agreed on for the Action Plan: (i) Long term Management of Natural Resources; (ii) Water Resource Management; (iii) Marine &

Coastal Areas Management; (iv) Food Security and Rural Development; (v) Climate Variability and Change; (vi) Disaster Risk Reduction; (vii) Health; (viii) Conflict and Political Crisis, and (ix) Infrastructure and Territorial Development. The following cross-cutting areas were also identified: (a) Policy and Institutional framework (b) Infrastructure framework (c) Capacity Development framework (d) Financial issues, and (e) Monitoring and Evaluation.

« *The Global Monitoring for Environment and Security and Africa (GMES & Africa) initiative is the crystallization of the longstanding cooperation between Africa and Europe in the area of space science & technology* »



In order to rollout the implementation of GMES and Africa initiative, three thematic areas were agreed upon and prioritized through consultations with African stakeholders, namely, (a) Long-Term Management of Natural Resources, (b) Marine and Coastal Areas, and (c) Water Resources Management, funded under the Pan African Program. An Identification study resulted in a project formulation report that recommended the implementation of these three thematic areas under two services, namely, Natural and Water Resources; and Marine and Coastal Areas, with 23 applications. These first two services will build upon the achievements of predecessor programmes which include MESA, AMESD and PUMA.

At the continental level, African Member States developed the African Space Policy and Strategy which were adopted by the African Union Heads of State and Government in January 2016, as the first step towards

the formalization of an African Outer Space Programme under the AU Agenda 2063 framework, focusing on creating a well-coordinated and integrated African Space Programme and a regulatory environment that promotes and supports an African agenda, and ensures that Africa is a responsible user of outer space.

This programme will be premised on developing African Space capability and coordinating various space activities in the continent in (i) Earth Observation, (ii) Satellite communication, (iii) Navigation and positioning; and (vi) Space Sciences and Astronomy. GMES and Africa will immensely contribute to the African Space Programme, in particular in EO mission and infrastructure, and in addressing cross-cutting areas.





THE ACTION

GMES & Africa's first phase consists of two main Services, and each is structured into Components, Themes and finally Applications. This design takes into account the needs expressed in the 2013 South Africa GMES and Africa Validation Workshop, the predecessor projects, particularly from MESA, to facilitate the continuation and expansion of the current services and the Copernicus Programme and structure.

The Action will set up the following two Services through African thematic, scientific and academic networks, in collaboration with European partners:

Natural and
Water Resources
Service

Marine
and Coastal
Service



Water and Natural Resources Service

This Service has 2 Components that address the combination of two thematic areas, namely, (a) Long-Term Management of Natural Resources, and (b) Water Resources

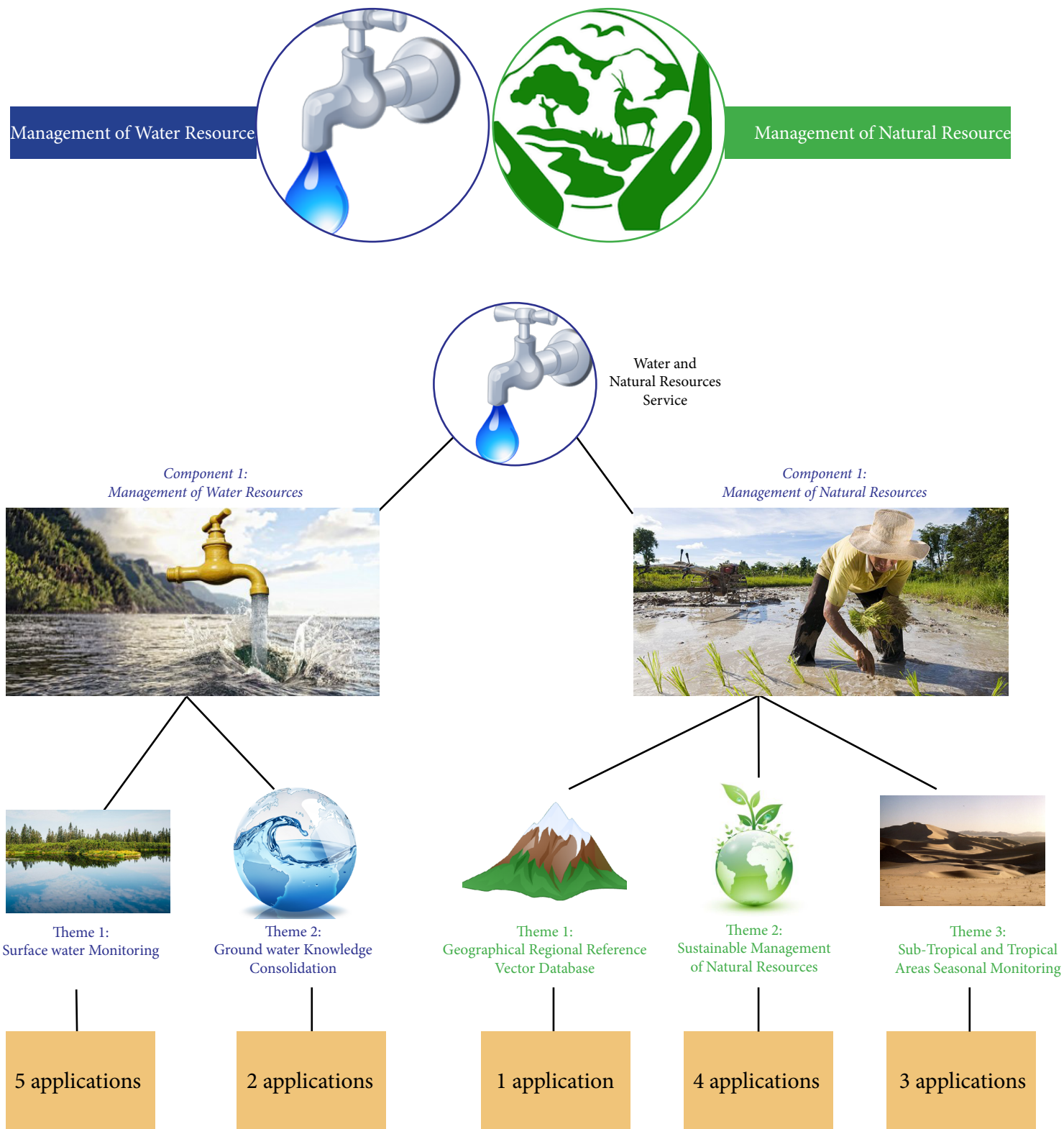


FIGURE 1 Structure of the proposed Water and Natural Resources Service

Marine and Coastal Service

The Service is entirely devoted to the Marine & Coastal thematic priority. It has 4 components: Monitoring and Forecasting of Oceanography Variables, Coastal Area Monitoring, Ship Traffic and Pollution Monitoring, and Marine Weather Forecast.

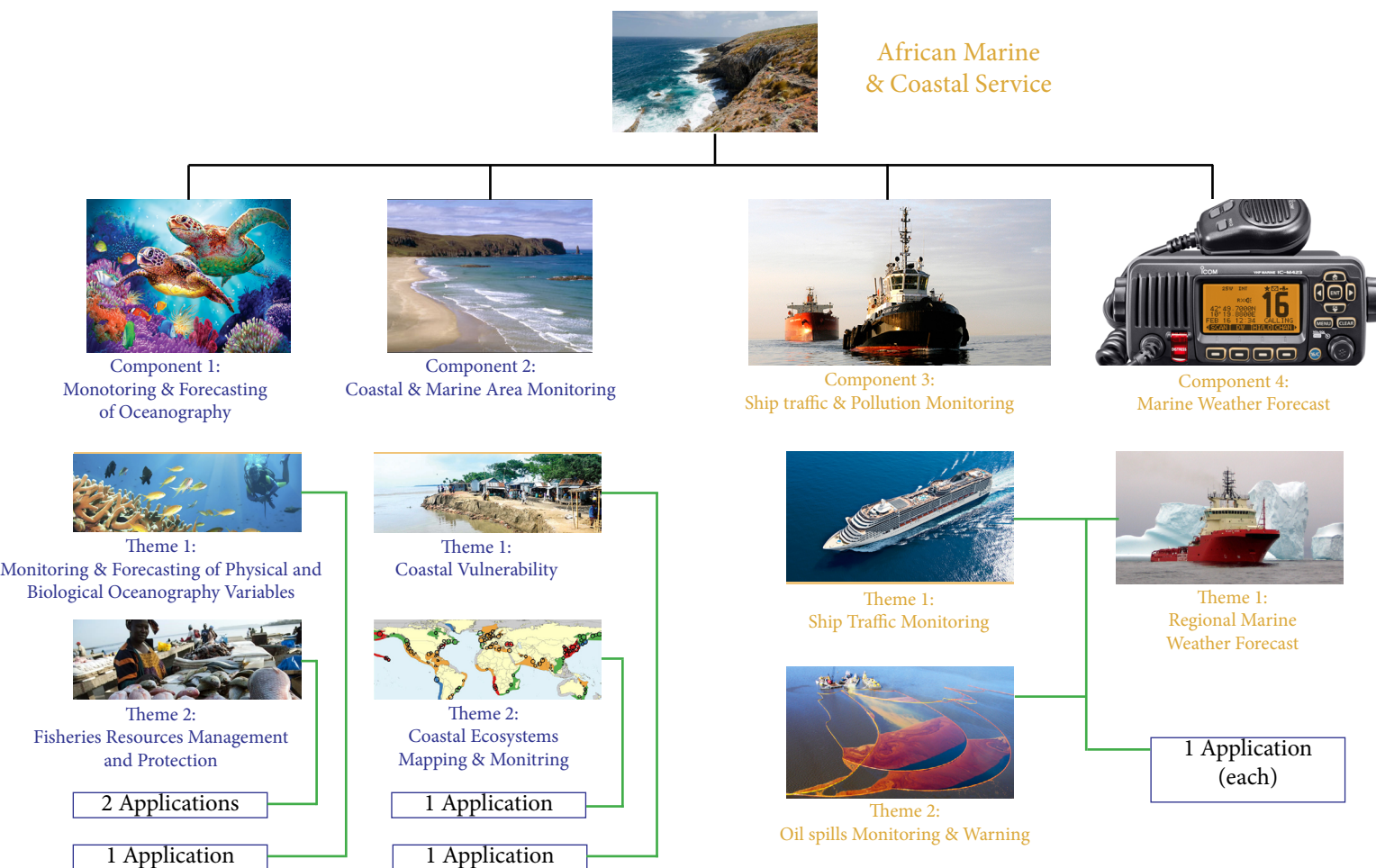
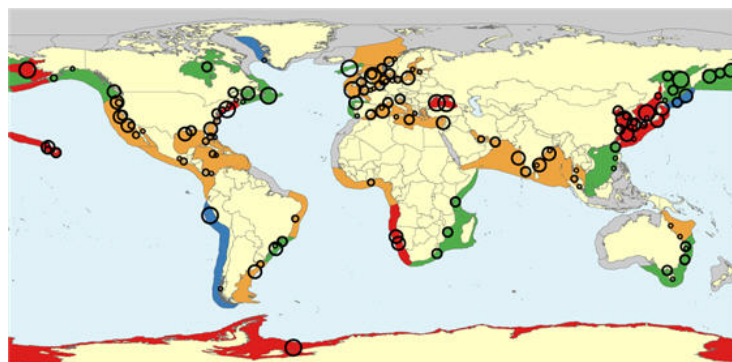


FIGURE 2 Structure of the proposed Marine and Coastal Service

Geographical coverage of the Action

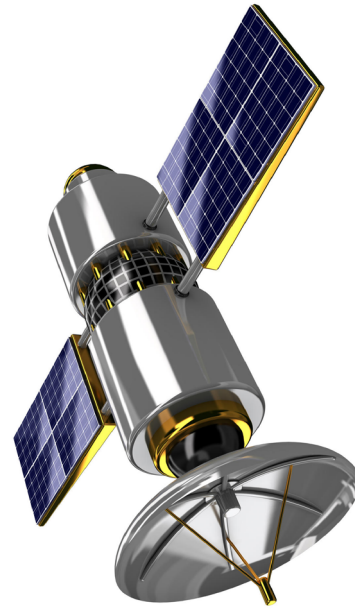
GMES & Africa covers the entire African continent, unlike its predecessors such as MESA that focused on Sub-Saharan Africa, excluding the Northern Africa region. Such an arrangement will facilitate the 'continentalization' of GMES & Africa Services, thereby enabling the equal distribution of resources and strengthening of EO capacity and collaboration across the continent.



Objectives

The objectives of the Action build on the overall GMES and Africa objectives for a long-term EU-Africa cooperation on space science and technology to enable the two continents to jointly solve and address global challenges and promote sustainable development under the Copernicus programme. They include:

- i) *Promoting the development in Africa of local capacities, institutional, human and technical resources for access to and exploitation of EO-based services on operational basis for sustainable development,*
- ii) *Supporting the implementation of the African Space Policy and Strategy, in particular on Earth Observation,*
- iii) *Providing decision-makers with information and tools needed for the implementation of sustainable environmental policies at the continental, regional and national levels through their Regional Economic Communities (RECs) and Regional Implementation Centers (RICs), and*
- iv) *Maintaining, improving and sustaining access to EO data.*



Outputs and Activities



Five outputs or result areas and activities for their accomplishment are proposed for the entire chain for the successful implementation of the Action that ensures timely availability of data, allows for efficient processing and analysis, packages the information in formats palatable for the users, and puts in place seamless communication mechanisms to ensure that information is channeled to policy makers and end users. These outputs further form the baseline for Evaluating and Monitoring the Action.



Output 1 Access to EO Data

*Ensuring access to EO data is maintained, improved and sustained.
The following are the activities under this output as outlined in the budget:*

i. Installation and maintenance of new and existing E-stations

ii. Strengthening data access and sharing practices and policies in promoting intra-African collaborative actions



Output 2 & 3: Implementation of the 2 Services

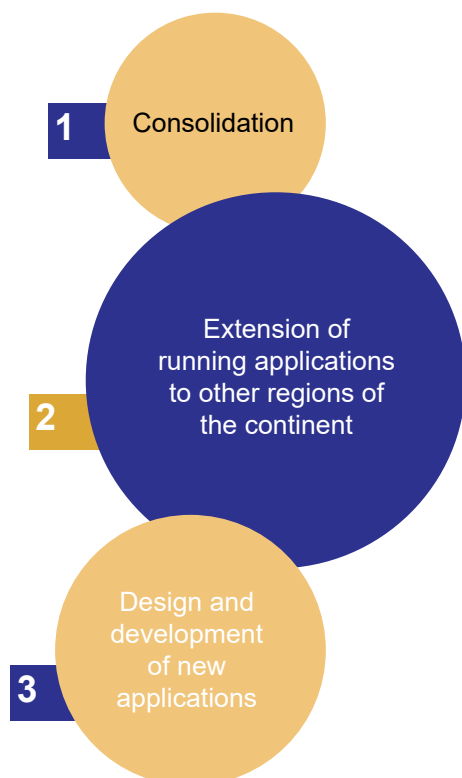
• **Output 2:**

Ascertaining that the Natural and Water Resources Service adequately informs policy makers and end users.

• **Output 3:**

Ensuring that the Marine & Coastal Service adequately informs policy makers and end users.

The following activities under this output to be undertaken by RICs using Grants are covering 23 applications:



Output 4 Education and Training in EO

Ensuring that regional and national capacities for African public institutions and private sector to generate and apply EO-based information for Natural and Water Resources as well as Marine & Coastal applications are enhanced.

AUC oversees this output and the following are the activities it covers:

1

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

2

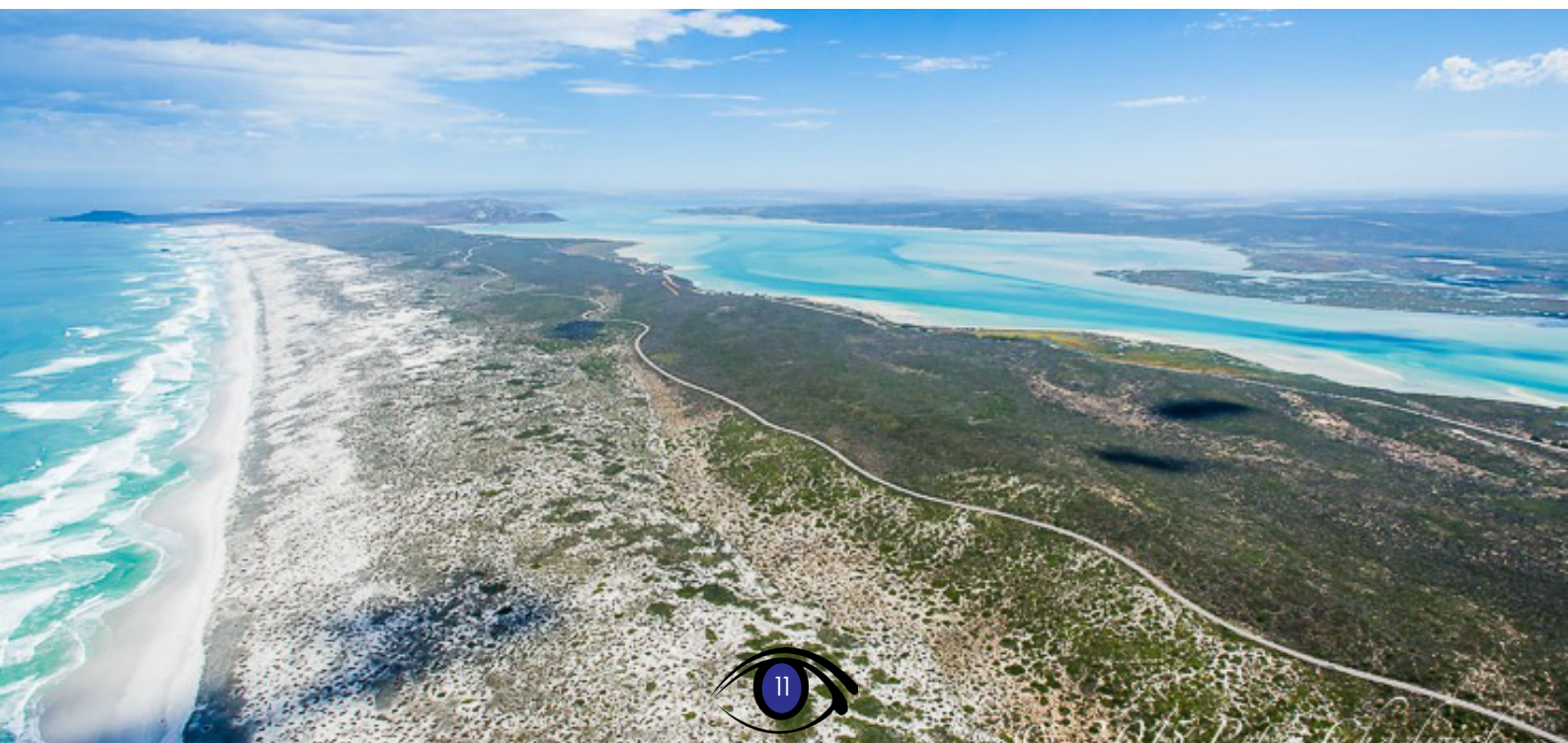
Conduct capacity development on Earth Observation for integrated decision-making

3

Establishment of virtual networking platforms

4

Facilitate continental and regional policy and priorities alignment



Output 5: Outreach and Raising Awareness

Ensuring that adequate awareness and outreach activities are undertaken to better engage policy makers, administrators, entrepreneurs, scientists and civil society at all levels in using EO and geospatial data and information.

The following are the activities under this output as outlined in the budget:

i. Strengthen awareness and outreach of Earth Observation among stakeholders including the private sector, policy makers and the general public.

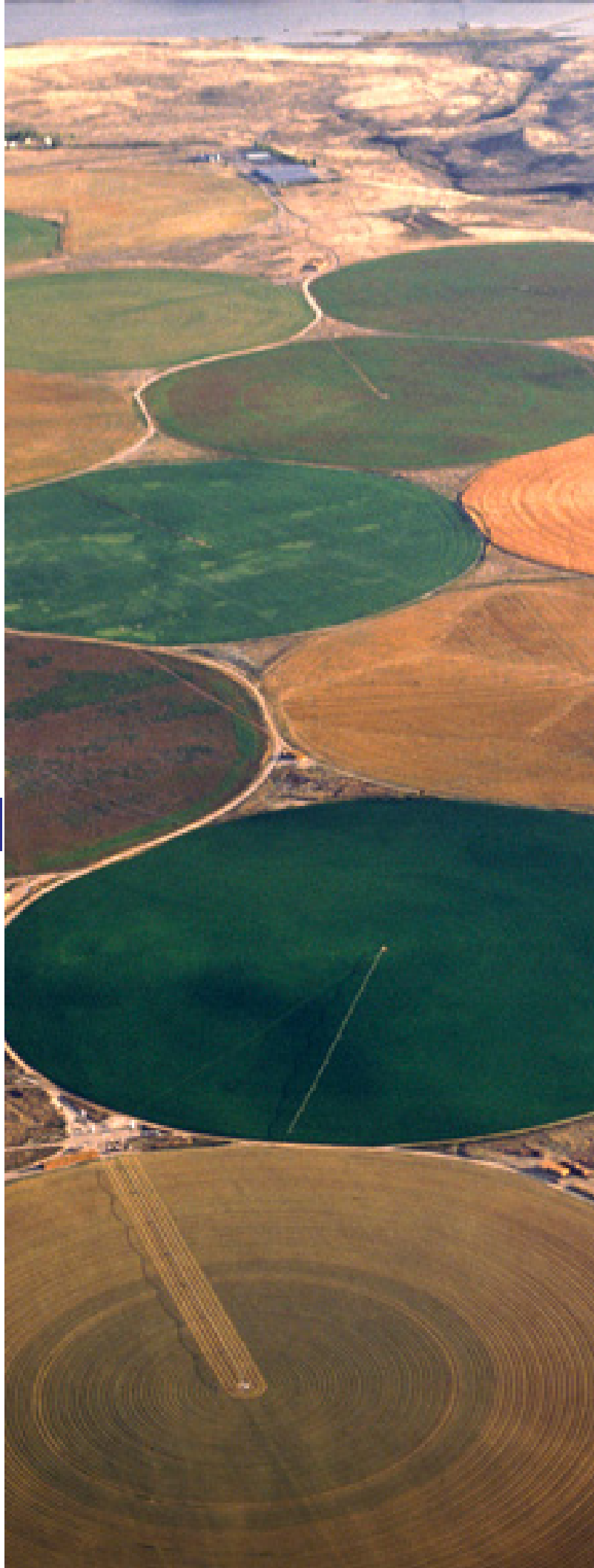
ii. Traditional and Social media in support of GMES & Africa.

Methodology

This Action is one of the three contracts concluded by EC to facilitate delivery of the 2 Services. Of the total funding for the Action, EUR17 Million will be purposely reserved for grants through a Call for Proposals to finance the operations of the RICs in the execution of the activities outlined under the Action.

The AUC will use its grants procedures to achieve the objectives of the programme ensuring that funds are spent in a transparent, efficient and fair manner. Thus, the bulk of the implementation work will be done by consortia of regional institutions led by the RICs that will apply for the grants. Each of the five regions of the continent will have at least one RIC to coordinate technical execution of the Action.

On the other hand, the capacity development component will be ensured through a procurement process to be overseen by the AUC. Training and capacity development will be carried out through the Pan African University.



Grants Award Procedure

The AUC will use its grant procedures through its Grant Management Manual that provides appropriate administrative policies, standard procedures, internal controls and institutional capacity for the Commission to effectively carry out the grant management process and oversight, from contracting, implementation, monitoring and reporting, to the closure of the project.

The grants under this Action will be implemented through an Open Call for Proposals, inviting RICs to apply for the grants to implement the two GMES & Africa Services in their respective regions according to the policy priorities defined by the countries of their regions through their RECs and other Regional Organizations as the case may be.

The programme emphasizes on consortia of regional implementing organizations led by RICs that have regional implementation mandates, regional coverage, and national linkages, among others.



Organizational Set-up and Responsibilities

The Global Monitoring for Environment and Security and Africa Program Management Unit (PMU), embedded in the Science and Technology Division of the Department of Human Resources, Science and Technology (HRST), coordinates and manages the initiative and mainstreams it to the activities of all relevant Directorates/Departments of the Commission, such as Rural Economy and Agriculture (DREA), Peace and Security (PSD) and Infrastructure and Energy (DIE). HRST serves as the lead Directorate by virtue of its mandate of coordinating space activities in the Commission.





Programme Management Unit

The Programme Management Unit currently consists of 7 personnel (Figure 3), as listed below:

- GMES & Africa Coordinator
- Senior Scientific Officer
- Senior Scientific Officer
- Training Officer
- The Finance Officer
- The Monitoring and Evaluation Officer
- Communication Officer

The TAT assists the PMU in the day-to-day operations of the programme. In the hierarchical structure, the TAT Team Leader reports to the Action Coordinator for the execution of specific assignments on a day-to-day basis, as well on the overall performance of the contract.

GMES & Africa Governance

The broader governance structure of the Action involves all the stakeholders.

The Policy Coordination and Advisory Committee (PCAC) is one of the key policy drivers under this Action is, with the responsibility to ensure policy coordination among the various key stakeholders of the project in order to facilitate the delivery of the expected results.

The Coordination Team for GMES & Africa coordinates the overall process of developing chapters for the thematic areas. The Coordination Team continues to provide technical advice and recommendations to the PCAC on implementation of the two services on a needs basis.

The Technical Advisory Committee provides technical insights to the PCAC in collaboration with the Coordination Team when required.



A joint initiative of the African Union and European Union Commissions



Global Monitoring for Environment and
Security and Africa (GMES & Africa)
African Union Commission
Human Resources, Science & Technology (HRST)
African Union Headquarters
P.O. Box 3243 | Roosevelt Street (Old Airport Area)
W21K19 | Addis Ababa, Ethiopia
Tel: (251) 11 551 77 00 | Fax:(251) 11 551 78 44



gmes@africa-union.org



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