



**GC-GMES-2011/23**

## **GMES programme: overview on the overall funding until 2013**

Continuous and significant financing efforts have been made by GMES stakeholders, namely the EU (through Framework Programmes for Research and Development, Preparatory Actions), ESA Member States (GMES Space Component Programme, Earth Watch and GMES Service Elements, Earth Observation Envelope Programme), together with direct contributions from Member States and European organisations, for the development of services, the access to space and in situ data, and for the construction of a dedicated observation infrastructure.

With the entry into force of the European Earth monitoring programme (GMES) and its initial operations (2011-2013) on 9 November 2010, GMES is now entering into a new phase with a dedicated operational budget.

This document provides an overview of the overall funding of GMES since the early stage of the initiative (1998 Baveno Manifesto) until the end of 2013. It does not address funding perspectives for the next Multi-Annual Financial Framework beyond 2014.

The document responds to a specific request made at the last GMES Committee.

This document is provided to the GMES Committee for information.

## **1. GMES HISTORY AND MAIN MILESTONES**

### **1998**

- Declaration on GMES during the “Baveno Manifesto” by space agencies and institutions willing to give a long term sustainability of services derived from space;

### **1999**

- GMES moves from "Global Monitoring for Environmental Security" to "Global Monitoring for Environment and Security";

### **2001**

- Gothenburg Summit<sup>1</sup>: the Heads of State and Government requested that GMES is aimed at the establishment by 2008 of a European capacity for the provision and use of operational information for monitoring and management of the environment and for civil security. The initiative and the strategy for its implementation are described in the common EC/ESA document, “A European Approach to Global Monitoring for Environment and Security (GMES): Towards Meeting Users’ Needs”<sup>2</sup>;
- Communication of the European Commission on the EC-ESA Action Plan for the Initial Period 2001-2003<sup>3</sup>;
- Council Resolution on the launch of the initial period of global monitoring for environment and security (GMES)<sup>4</sup>;
- ESA Ministerial Council (Edinburgh): developments of the first GMES services with ESA Member States funds, in parallel to EC FP6 funds;

### **2003**

- GMES Vision and targets for 2008 and Work progress of the Initial Period of the GMES Action Plan (2002-2003);
- First meeting of the Group of Earth Observation (GEO) in Washington;
- Position paper from a Working Group on the security dimension of GMES, outlining the thematic and policy areas where GMES could contribute;

### **2004**

- Commission Communication "*GMES: Establishing a GMES capacity by 2008*"<sup>5</sup> introduces an Action Plan aimed at establishing a working GMES capacity by 2008;

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<sup>1</sup> A sustainable Europe for a Better World: A European Union Strategy for Sustainable Development. Commission’s proposal to the Gothenburg European Council. COM(2001)264final of 15.5.2001.

<sup>2</sup> SEC(2001) 993 of 16/06/2001 Commission Staff Working Paper - Joint document from Commission services and European Space Agency

<sup>3</sup> COM(2001)609 final - "Global Monitoring for Environment and Security (GMES) Outline GMES EC Action Plan (Initial Period: 2001 – 2003)"

<sup>4</sup> Council Resolution (2001/C 350/02)

- Final report of the GMES Initial Period (2001-2003) jointly established by the EC and ESA and giving the recommendations for the next steps;
- Commission proposal for the INSPIRE Directive<sup>6</sup>;
- First Space Council meeting – a joint and concomitant meeting of the ESA Council at ministerial level and of the European Union Competitiveness Council – took place in Brussels in November;
- EC/ESA Framework Agreement signed, providing the basis for cooperation in space, including GMES;

## 2005

- Commission Communication on the Preliminary elements for a European Space Policy<sup>7</sup>;
- Commission Communication "*GMES: From Concept to Reality*" establishing priorities for the implementation of GMES services in 2008 with the selection of Fast Track Services (land monitoring, marine monitoring and emergency response services). Other Pilot Services address atmosphere monitoring, security and climate change;
- ESA Ministerial Council (Berlin): adoption of the optional ESA GMES Space Component (GSC) programme and subscription by Member States of the first GMES space hardware (€268 million<sup>8</sup> at 2008 e.c.);

## 2006

- Decision by the Commission to establish the GMES Bureau for addressing the GMES governance structure, the long-term financial sustainability of the system, and for ensuring the delivery of fast track services by 2008;
- Adoption of the EU FP7 Space Programme worth € 1,200 million (c.e.c.) for GMES;

## 2007

- Adoption of the European Space Policy Resolution at the 4<sup>th</sup> Space Council<sup>9</sup>, recognising GMES as a flagship of the European Space Policy, next to Galileo;
- Adoption of the 'Lisbon Declaration on GMES and Africa' at a meeting of organisations and governmental European and African bodies and entities under the aegis of the Portuguese Presidency of the Council of the European Union;

## 2008

- First EC-ESA Agreement on GMES providing the legal basis for Community contribution to the development of the GSC using FP7 funds;
- Provision by the EC of the first initial operational funding through the implementation of a GMES preparatory action;

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<sup>5</sup> COM(2004)065 - "Global Monitoring for Environment and Security (GMES): Establishing a GMES capacity by 2008 - Action Plan (2004-2008)"

<sup>6</sup> COM(2004) 516 final – Directive establishing an infrastructure for spatial information in the Community (INSPIRE)

<sup>7</sup> COM(2005)208 final - "European Space Policy - Preliminary Elements"

<sup>8</sup> This amount (€268 million at 2008 e.c.) grew to €790 million (2008 e.c.) with the decision to start phase 2 of segment 1 taken on 27 Sep 2007.

- Launch of the GMES and Africa partnership through the “Lisbon Process on GMES and Africa” with a view to serving the African users;
- Official launch of the three fast track services and two pilot services in their pre-operational version at the occasion of the GMES Forum held in Lille, France;
- Commission Communication "*GMES: We care for a Safer Planet*" establishing a basis for the financing, operations and effective management of GMES;
- ESA Ministerial Council (The Hague) with additional subscription of the GMES Space Programme (€31 million at 2008 e.c.);
- ESA Declaration of the GMES Space Component Programme<sup>10</sup>

## 2009

- Commission Proposal for a Regulation on "*the European Earth Observation Programme (GMES) and its initial operations (2011-2013)*" proposing a legal basis for the GMES programme and EC funding of its initial operations;
- Commission Communication on the GMES Space Component<sup>11</sup> : “GMES challenges and next steps for the Space Component”;

## 2010

- Decision of the Commission to set up the GMES Partners Board;
- Entry into force of the Regulation on "*the European Earth Observation Programme (GMES) and its initial operations (2011-2013)*"<sup>12</sup>

## 2011

- Setting up by the Commission of the GMES Committee, User forum, Security Board;
- Commission Communication on the next Multi-Annual Financial Framework foreseeing the funding of GMES outside the EU budget after 2013;

## 2. MOBILISING FUNDING RESOURCES

### 2.1. 2000-2006: designing the concept of GMES

Different financial instruments have been mobilised depending on the nature of the activities to be funded for GMES.

On the EC side, preliminary thematic projects and networks have been supported by the 5th Framework Programme for Research, Technological Development and Demonstration. The first concrete steps started with the development of the pre-operational GMES fast track services (2004-2006) using available funds from EC/FP6 Space & GMES Theme (€100 million).

The first ESA activities in support to GMES were adopted at the ESA Ministerial Council in November 2001 (e.g. Earth Watch proposal and GMES Service Element). The ESA

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<sup>10</sup> ESA/C(2008)182, Att.: ESA/PB-EO/CXI/Dec. 1, rev. 5 (Final)

<sup>11</sup> COM(2009)589 Final "GMES: Challenges and Next Steps for the Space Component"

<sup>12</sup> Regulation (EU) No 911/2010, 22 September 2010, on the European Earth monitoring programme (GMES) and its initial operations (2011 to 2013)

contribution through the GMES Service Elements amounts to €130 million. Additional studies were launched by ESA for the GMES space component (€30 million).

## **2.2. 2007-2013: from concept to reality**

### *2.2.1. EU contribution*

The EU contribution for this period comes from four sources:

- FP7: Under the Seventh Framework Programme for Research (FP7), 2007 – 2013 the European Commission has made € 1.4 billion available in support of space related activities, out of which about 85% was made available for GMES, with a split between services and the space component (€365 million and €624 million at current economic conditions for the services and for the space component respectively, and €9 million for the in situ component);
- GIO: The GMES Regulation on the Initial Operations provides an operational budget of €107 million;
- Preparatory Actions: some € 10 million have been made available for funding operational activities in view of the implementation of the GMES Regulation;
- DG REGIO: additional funding was made available by DG REGIO for supporting the development of the Urban Atlas.

Details of the FP7 and GIO appropriations are presented in table 1.

### *2.2.2. ESA contribution*

On its side, ESA received contributions from its Member States for the following activities:

- €1,621 million (2008 e.c.) for the GMES Space Component (for both segments 1 and 2);
- €32 million for further developing some GMES Service Element projects;
- And €75 million for the Climate Change Initiative.

### Space Component

The space component includes:

- The construction, launches and operations of Sentinel satellites or instruments developed specifically for GMES;
- The GMES Space Component Data Access (GSCDA) which is composed of an access infrastructure and a data buy mechanism enabling the access to GMES Contributing Missions (GCM) developed and operated outside GMES.

The total development cost of the GMES Space Component is €2,300 million (2008 e.c.) of which ESA Member States provide 72% and the EC 28%.

According to the GSC Programme Declaration adopted at the CMIN'08 Segment 1 and Segment 2 have been merged into a unique set of activities.

### 2.2.3. Other contributions

Other contributions should be taken into consideration for consolidating the overall past funding of GMES, namely:

- Member States with their in kind contribution of in situ data which can be estimated at more than €300 million/year, and their respective national space programmes which leverage the access to the GMES contributing missions;
- FP consortia who participated to GMES projects with a share of approximately half of the EC contribution, thus in the order of €230 million for the whole period until 2013;
- Intergovernmental agencies such as EUMETSAT and ECMWF who provide access to some of their infrastructure, skills and data at no cost for GMES (e.g. computing facilities at ECMWF, meteorological data...);
- Other Commission services (DG ECHO, DG ENV, DG JRC...) who provided additional funding to GMES related activities (e.g. CORINE Land Cover, EFAS, ...).

### 2.3. Global overview

**As a whole, the overall funding made available until 2013 by the EU and ESA has reached over €3 billion (table 2):**

- For the *in situ* and service components: the EC provided funding above €520 million, completed by €240 million from ESA;
- For the space component, ESA made some €1,650 million available and the EC €780 million (FP7 and GIO funding).

Access to space data has been supported by dedicated FP7 budgets with €48 million through a FP7 grant, completed by €53 million as part of the EC/ESA Delegation Agreement, and additional €43 million from FP7 as a complement to the GIO budget.

A summary is given in the following table:

<b>M€(2000-2013)</b>	<b>ESA</b>	<b>EU</b>	<b>others</b>
<b>Sentinels</b>	1,651	632	
<b>Data Access</b>			
Access infrastructure	-	40	
Data buy	-	104	
<b>Services</b>			
Core Services	-	262	~116 (FP7 consortia)
other FP7	-	256	~120 (FP7 consortia)
GSE+CCI	237	-	-
<b>In-situ</b>		9	
<b>Total</b>	<b>1,888*</b>	<b>1,303*</b>	

(\*): figures are not fully comparable since ESA figures are based on 2008 e.c. and EC figures on c.e.c. Readjusting the table to 2008 e.c. would reduce the EC contribution with a factor related to the inflation rate.

# ANNEX 1

INDICATIVE OVERVIEW - Global Monitoring for Environment and Security (GMES) - Appropriations available under the 7th Framework Programme for Research and the European Earth observation programme and its initial operations (2011 - 2013)													
	2007-2010		2011 - 2013									TOTAL 2007 - 2013	
	FP7 - 7th framework programme for research	preparatory action (2008 - 2010)	2011		2012		2013		total 2011-2013			Total	of which from FP7
			FP7 - 7th framework programme for research	GMES initial operations programme	FP7 - 7th framework programme for research	GMES initial operations programme	FP7 - 7th framework programme for research	GMES initial operations programme	FP7 - 7th framework programme for research	GMES initial operations programme	grand total		
SERVICE COMPONENT													
Land (incl. Climate-related activities)	22	3		2,7		10,0		13,3		26			
Emergency	27	3		2,7	8	4,3		5,0		12			
Marine (incl. Climate-related activities)	34		28										
Atmosphere (incl. Climate-related activities)	12	4	19										
Climate	9				6								
Security	19		1		14								
Downstream, service development, market uptake, international cooperation	69		8		10	2,0		3,0		5			
GMES & Africa	5		1										
S/TOTAL SERVICE COMPONENT	197	10	57	5,4	38	16,3	73	21,3	168	43	211	418	365
DATA ACCESS FP7 GRANT	48											48	48
IN SITU COMPONENT	3				6				6			9	9
SPACE COMPONENT INCLUDING DATA ACCESS	165		120	3,6	159	23,7	180	33,7	459	61	520	685	624
Maximum planned amount	413	10	177	9,0	203	40,0	253	55,0	633	104	737	1160	1046
Additional appropriations in FP7 as referred to in the proposed GMES Regulation			10		15		18		43		43	43	43
Administrative Expenditures - Support to policy measures				1,0		1,0		1,0		3	3	3	
TOTAL AVAILABILITY	413	10	187	10	218	41	271	56	676	107	783	1206	1089

Table 1: overview of the funding made available under FP7 and GIO for the period 2007-2013

## ANNEX 2

Global Monitoring for Environment and Security (GMES)												
Total appropriations available from EC and ESA - Period 2000-2013 (€ million)												
	2000-2006		2007-2013								TOTAL 2000-2013	
	EC	ESA	EC					ESA			EC	ESA
	FP6	GSE	FP7	Additional FP7 appr	FP7 DA Grant	Prep Actions	GIO	Sentinels	GSE follow-on	CCI		
Service component	100	130	365			10	43		32	75	518	237
Space component including data access		30	624	43	48		61	1621			776	1651
In situ component			9								9	
S/Total	100	160	998	43	48	10	104	1621	32	75	1303	1888
Administrative Expenditures - Support to policy measures						1	3				4	
TOTAL	100	160	1207					1728			1307	1888
											TOTAL	3195

Table 2: overall overview of the funding made available for GMES during the period 2000-2013

Note : figures are not fully comparable since ESA figures are based on 2008 e.c. and EC figures on c.e.c. Readjusting the table to 2008 e.c. would reduce the EC contribution with a factor related to the inflation rate.