

IV. PROTECTING AND MANAGING THE NATURAL RESOURCE BASE OF ECONOMIC AND SOCIAL DEVELOPMENT

Action items in the Plan of Implementation (A/CONF.199/20, Resolution 2)		Relevant space applications	Space-related initiatives and programmes that could support the implementation of the action		Web-site(s) for further information
Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
	- <i>Water management</i> -				
25(c)	Promote priority action by Governments, with the support of all stakeholders, in water management and capacity-building at the national level and, where appropriate, at the regional level, and promote and provide new and additional financial resources and innovative technologies to implement chapter 18 of Agenda 21	RS and GIS for water resources assessment and water management	ESA Funded projects by Verbundplan GmbH, Austrian Research Centers and IMGI – Innsbruck (Austria)	Study Report on “International treaties, agreements and programmes relevant to non-scientific application of satellite based hydrological data”	
			BRGM, CLS, AETS, Ministry of Research and New Technologies (France)	RESSOURCE: Project to use space telecommunications for water data collection	
			JAXA, GISTDA and LAPAN	Asia-Pacific Pilot Project	
			ASI	COSMO-SkyMed Programme for monitoring and managing coastlines and marine and inland waters, including ice monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			FAO	Global Information and Early Warning System (GIEWS), which uses the Advanced Real Time Environmental Monitoring Information System (ARTEMIS)	http://www.fao.org/giews/english/index.htm , http://geoweb.fao.org
				Southern African Development Community (SADC) Regional Remote Sensing Unit with the use of ARTEMIS	http://metart.fao.org , http://www.sadc.int/
			FAO, UNEP	AFRICOVER/Land Cover Mapping: Global Land Cover Network (GLCN) Initiative	www.africover.org
			ESCAP	Regional Space Applications Programme for Sustainable Development in Asia and the Pacific (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			WMO	Hydrology and Water Resources Programme	http://www.wmo.ch/web/homs/1stpage.html
UNESCO	Space Hydrology International Partnership (SHIP) in cooperation with European Space Agency’s TIGER project	http://www.unesco.org/water			

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				Cross-cutting project "Application of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa"	http://ioc.unesco.org/goos/africa/cross-cutting.htm
			SUPARCO/WAPDA, Irrigation Deptt., Government of Pakistan	SRS applications program for water resources and collaboration with other organizations.	
25(d)	Intensify water pollution prevention to reduce health hazards and protect ecosystems by introducing technologies for affordable sanitation and industrial and domestic wastewater treatment, by mitigating the effects of groundwater contamination and by establishing, at the national level, monitoring systems and effective legal frameworks	RS and GIS for water pollution monitoring systems	ASI	COSMO-SkyMed Programme for monitoring and managing coastlines and marine and inland waters, including ice monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			FAO, UNEP	AFRICOVER/Land Cover Mapping; Global Land Cover Network (GLCN) Initiative	www.africover.org
			UNESCO	Cross-cutting project "Application of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa"	http://ioc.unesco.org/goos/africa/cross-cutting.htm
				IOC's "Regional Ocean Observing and Forecasting Systems for Integrated Management of Ocean and Coastal Environment and Natural Disasters in Africa" (ROOFS-AFRICA) project	http://ioc.unesco.org/goos/africa/ROOFS-AFRICAProject2003.doc
26.	Develop integrated water resources management and water efficiency plans by 2005, with support to developing countries.	RS/GIS and GNSS for evaluation of water resources and data collection	DESA	Satellite imagery and GPS are used to evaluate water resources potential and carry out data collection	
			UNESCO	Cross-cutting project "Application of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa"	http://ioc.unesco.org/goos/africa/cross-cutting.htm
26(a)	Develop and implement national/regional strategies, plans and programmes with regard to integrated river basin, watershed and groundwater management and	RS and GIS for integrated river basin watershed and groundwater management	BRGM, CLS, AETS, Ministry of Research and New Technologies (France)	RESSOURCE: Project to use space telecommunications for water data collection	
			ELTE Geophysics Department (Hungary)	Research of river-basin Tisza	

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	introduce measures to improve the efficiency of water infrastructure to reduce losses and increase recycling of water		ASI	COSMO-SkyMed Programme for monitoring and managing coastlines and marine and inland waters, including ice monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			FAO, UNEP	AFRICOVER/Land Cover Mapping: Global Land Cover Network (GLCN) Initiative	www.africover.org
			UNESCO	Space Hydrology International Partnership (SHIP) in cooperation with European Space Agency's TIGER project	http://www.unesco.org/water
				Cross-cutting project "Application of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa"	http://ioc.unesco.org/goos/africa/cross-cutting.htm
			SUPARCO/WAPDA	Snow Cover Estimation and runoff Assessment in INDUS river Basin Using SRS/GIS data.	
26(b)	Employ the full range of policy instruments, including regulation, monitoring, voluntary measures, market and information-based tools, land-use management and cost recovery of water services, without cost recovery objectives becoming a barrier to access to safe water by poor people, and adopt an integrated water basin approach	RS and GIS for monitoring and information gathering for decision-making	BRGM, CLS, AETS, Ministry of Research and New Technologies (France)	RESSOURCE: Project to use space telecommunications for water data collection	
			ASI	COSMO-SkyMed Programme for monitoring and managing coastlines and marine and inland waters, including ice monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			FAO, UNEP	AFRICOVER/Land Cover Mapping: Global Land Cover Network (GLCN) Initiative	www.africover.org
			UNESCO	Space Hydrology International Partnership (SHIP) in cooperation with European Space Agency's TIGER project	http://www.unesco.org/water
				Cross-cutting project "Application of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa"	http://ioc.unesco.org/goos/africa/cross-cutting.htm

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26(d)	Develop programmes for mitigating the effects of extreme water-related events	RS and GIS for preventing and mitigating effects of extreme water-related events	EADS, Astrium, Alcatel Space, MétéoFrance, Cemagref, BRGM, SPOT Image, SCOT, MSI, Sertit Irit, IMFT, Ministry of Research and New Technologies (France)	PACTES project: flood prediction and prevention using space technology	
			ASI	COSMO-SkyMed Programme for monitoring and managing coastlines and marine and inland waters, including ice monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			FAO	Global Information and Early Warning System (GIEWS), which uses the Advanced Real Time Environmental Monitoring Information System (ARTEMIS)	http://www.fao.org/giews/english/index.htm , http://geoweb.fao.org
				Southern African Development Community (SADC) Regional Remote Sensing Unit with the use of ARTEMIS	http://metart.fao.org , www.sadc.int
			FAO, UNEP	AFRICOVER/Land Cover Mapping; Global Land Cover Network (GLCN) Initiative	www.africover.org
			ESCAP	Regional Space Applications Programme for Sustainable Development in Asia and the Pacific (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			WMO	Hydrology and Water Resources Programme	http://www.wmo.ch/web/wcp/wcp-home.html
				Natural Disaster Prevention and Mitigation Programme	
			OOSA, UNOPS	Serving the UN with satellite imagery and value adding products through International Charter "Space and Major Disasters"	www.unosat.org , www.disasterscharter.org
UNOPS	Global Mapping Grant Facility	www.unosat.org			

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			SUPARCO	Development of GIS database of floods using SRS data pertaining to the past 20 years	
		RS and GIS information as decision making tools for policy makers and managers	UNESCO	Cross-cutting project "Application of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa"	http://ioc.unesco.org/goos/africa/cross-cutting.htm
		RS and GIS information as decision making tools for policy makers and managers; development of forecasting and management models; training and research as a key to poverty alleviation	UNESCO	IOC's "Regional Ocean Observing and Forecasting Systems for Integrated Management of Ocean and Coastal Environment and Natural Disasters in Africa" (ROOFS-AFRICA) project	http://ioc.unesco.org/goos/africa/ROOFS-AFRICAPROject2003.doc
27	Support developing countries and countries with economies in transition in their efforts to monitor and assess the quantity and quality of water resources, including through the establishment and/or further development of national monitoring networks and water resources databases and the development of relevant national indicators.	RS and GIS for water resources monitoring and assessment	National Agency for Water Resources (ANRH) (Algeria)	Study of soil resources by remote sensing	
			ESA and Geoville (Austria)	Technical study analyzing the progress in EO from Rio Earth Conference to the WSSD in Johannesburg.	
			ASI	COSMO-SkyMed Programme for monitoring and managing coastlines and marine and inland waters, including ice monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	

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			FAO	Global Information and Early Warning System (GIEWS), which uses the Advanced Real Time Environmental Monitoring Information System (ARTEMIS)	http://www.fao.org/giews/english/index.htm , http://geoweb.fao.org
				Southern African Development Community (SADC) Regional Remote Sensing Unit with the use of ARTEMIS	http://metart.fao.org , http://www.sadc.int/
			FAO, UNEP	AFRICOVER/Land Cover Mapping; Global Land Cover Network (GLCN) Initiative	www.africover.org
			WMO	Hydrology and Water Resources Programme	http://www.wmo.ch/web/wcp/wcp-home.html
			UNESCO	Space Hydrology International Partnership (SHIP) in cooperation with European Space Agency's TIGER project	http://www.unesco.org/water
				Cross-cutting project "Application of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa"	http://ioc.unesco.org/goos/africa/cross-cutting.htm
				IOC's "Regional Ocean Observing and Forecasting Systems for Integrated Management of Ocean and Coastal Environment and Natural Disasters in Africa" (ROOFS-AFRICA) project	http://ioc.unesco.org/goos/africa/ROOFS-AFRICAPROject2003.doc
28.	Improve water resource management and scientific understanding of the water cycle through cooperation in joint observation and research, and for this purpose encourage and promote knowledge-sharing and provide capacity-building and the transfer of technology, as mutually agreed,	RS and GIS for water resource management and scientific understanding of the water cycle	Australia's Department of the Environment and Heritage (DEH)	Various initiatives that use Earth observing remote sensing and GIS data analysis	http://www.deh.gov.au/
			CNES - ISRO	Mégha-Tropique project for water studies	
			CNES – ESA – CDPI (France)	Surface Meteorological Observation System (SMOS) for global observation of land surface humidity and ocean salinity. Climate forecasting	

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	including remote-sensing and satellite technologies , particularly to developing countries and countries with economies in transition.		ASI	COSMO-SkyMed Programme for monitoring and managing coastlines and marine and inland waters, including ice monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			FAO	Global Information and Early Warning System (GIEWS), which uses the Advanced Real Time Environmental Monitoring Information System (ARTEMIS)	http://www.fao.org/giews/english/index.htm , http://geoweb.fao.org
				Southern African Development Community (SADC) Regional Remote Sensing Unit with the use of ARTEMIS	http://metart.fao.org , http://www.sadc.int/
			FAO, UNEP	AFRICOVER/Land Cover Mapping; Global Land Cover Network (GLCN) Initiative	www.africover.org
			ESCAP	Regional Space Applications Programme for Sustainable Development in Asia and the Pacific (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			WMO	Hydrology and Water Resources Programme	http://www.wmo.ch/web/homs/hwrpframes.html
				WMO Space Programme	http://www.wmo.ch/index-en.html
			UNESCO	Cross-cutting project "Application of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa"	http://ioc.unesco.org/goos/africa/cross-cutting.htm
				IOC's "Regional Ocean Observing and Forecasting Systems for Integrated Management of Ocean and Coastal Environment and Natural Disasters in Africa" (ROOFS-AFRICA) project	http://ioc.unesco.org/goos/africa/ROOFS-AFRICA.htm
	- Coastal area management -				
30(b)	Promote the implementation of chapter 17 of Agenda 21, which provides the programme of action for	RS and GIS for integrated management of	Ministry for Regional Planning and the Environment (Algeria)	Mapping of development indicators by remote sensing. Blue Plan	

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	achieving the sustainable development of oceans, coastal areas and seas through its programme areas of integrated management and sustainable development of coastal areas, including exclusive economic zones	coastal areas and marine resources	CLS, IRD, Thales, SODENA, Ministry of Research and New Technologies (France)	Integrated fish stock resource management aid service (SEAGERH)	
			CLS (France)	Argos beacon applications	
			ASI	COSMO-SkyMed Programme for monitoring and managing coastlines and marine and inland waters, including ice monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			SUPARCO, Forest Deptt. Govt. of Pakistan	SRS applications Program for oceanographic studies including development of coastal areas, etc.	
			ESCAP	Regional Space Applications Programme for Sustainable Development in Asia and the Pacific (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			WMO	World Weather Watch Programme	http://www.wmo.ch/web/www/www.html
		RS and GIS information as decision making tools for policy makers and managers; development of forecasting and management models; training and research as a key to poverty alleviation	UNESCO	IOC's "Regional Ocean Observing and Forecasting Systems for Integrated Management of Ocean and Coastal Environment and Natural Disasters in Africa" (ROOFS-AFRICA) project	http://ioc.unesco.org/goos/africa/ROOFS-AFRICA.htm
30(e)	Promote integrated, multidisciplinary and multisectoral coastal and ocean management at the national level and encourage and assist coastal States in	RS and GIS for integrated coastal management	BRGM, BRLI, CNES, CIRAD, Ifremer, SCOT, Ministry of Research and New Technologies (France)	AGIL project for integrated coastal management. Development of services	

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	developing ocean policies and mechanisms on integrated coastal management		ASI	COSMO-SkyMed Programme for monitoring and managing coastlines and marine and inland waters, including ice monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			SUPARCO, NGOs, Forest Deptt. Govt. of Pakistan.	Use of SRS data and GIS for monitoring and managing coastal resources	
			ESCAP	Regional Space Application Programme for Sustainable Development in Asia and the Pacific (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
		RS and GIS information as decision making tools for policy makers and managers; development of forecasting and management models; training and research as a key to poverty alleviation	UNESCO	IOC's "Regional Ocean Observing and Forecasting Systems for Integrated Management of Ocean and Coastal Environment and Natural Disasters in Africa" (ROOFS-AFRICA) project	http://ioc.unesco.org/goos/africa/ROOFS-AFRICA.htm
31(d)	Urgently develop and implement national and, where appropriate, regional plans of action, to put into effect the international plans of action of the Food and Agriculture	RS and GIS information as decision making tools for policy makers and	SPOT Image, IRD, Ifremer, Ministry of Research and New Technologies (France)	IBIS for tracking of vessels	
			ESA/EU	Galileo and satellite navigation applications	
			CLS	Data collection with Argos beacons	

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	Organization of the United Nations, in particular the International Plan of Action for the Management of Fishing Capacity ¹ by 2005 and the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing by 2004. Establish effective monitoring, reporting and enforcement, and control of fishing vessels, including by flag States, to further the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing	managers; development of forecasting and management models; training and research as a key to poverty alleviation	ASI	COSMO-SkyMed Programme for monitoring and managing coastlines and marine and inland waters, including ice monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			UNESCO	IOC's "Regional Ocean Observing and Forecasting Systems for Integrated Management of Ocean and Coastal Environment and Natural Disasters in Africa" (ROOFS-AFRICA) project	http://ioc.unesco.org/goos/africa/ROOFS-AFRICA.htm
35	Governments, taking into account their national circumstances, are encouraged, recalling paragraph 8 of resolution GC (44)/RES/17 of the General Conference of the International Atomic Energy Agency, and taking into account the very	Work of the Scientific and Technical Subcommittee of COPUOS in the use of nuclear sources in outer space	ASI	COSMO-SkyMed Programme for monitoring and managing coastlines and marine and inland waters, including ice monitoring. The programme can also be used for intelligence applications for strategic purposes. The Programme is to start operating in 2007 and reach full capacity in 2008.	

¹ Rome, Food and Agriculture Organization of the United Nations, 1999.

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	serious potential for environment and human health impacts of radioactive wastes, to make efforts to examine and further improve measures and internationally agreed regulations regarding safety, while stressing the importance of having effective liability mechanisms in place, relevant to international maritime transportation and other transboundary movement of radioactive material, radioactive waste and spent fuel, including, inter alia, arrangements for prior notification and consultations done in accordance with relevant international instruments		ESA and Geoville (Austria)	Technical study analyzing the progress in EO from Rio Earth Conference to the WSSD in Johannesburg.	
36.	World Summit on Sustainable Development – Plan of Implementation – specific references to Earth Observation	Study on Earth Observation Applications for Sustainable Development	ESA and Geoville (Austria)	Project in support for the Water Framework Directive and the Soil Protection Initiative	
			ASI	COSMO-SkyMed Programme for scientific applications. The Programme is to start operating in 2007 and reach full capacity in 2008.	
36(a)	Increase scientific and technical collaboration, including integrated assessment at the global and regional levels, including the appropriate transfer of marine science and marine technologies and techniques for the conservation and management of living and non-living marine resources and expanding ocean-	RS to monitor ocean	CNES - NASA	TOPEX-Poseidon for altimetric measurements (ocean circulation, etc.)	
				Jason-1 for global altimetric measurements of the oceans, following TOPEX-Poseidon. General meteorology and climate understanding.	
			CNES – MétéoFrance - IRD - SHOM	MERCATOR for ocean simulation on the basis of satellite observation; climate forecasting	

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	observing capabilities for the timely prediction and assessment of the state of marine environment		CNES-ESA-CDPI (France)	Surface Meteorological Observation System (SMOS) for global observation of land surface humidity and ocean salinity; climate forecasting	
			CNES – CNRS – IRD – IPEV – Ifremer – MétéoFrance - SHOM	France’s participation in the Global Ocean Observing System (GOOS) using CORIOLIS and MERCATOR	
			ASI	COSMO-SkyMed Programme for monitoring and managing coastlines and marine and inland waters, including ice monitoring. The Programme can also be used for ecological monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			ESCAP	Regional Space Application Programme for Sustainable Development in Asia and the Pacific (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			WMO	Applications of Meteorology Programme	http://www.wmo.ch/web/aom/aom.html
			UNESCO	IOC’s Global Ocean Observing System (GOOS) Regional Alliances	http://ioc.unesco.org/iocweb/index.php
			UNESCO, WMO, UNEP	Intergovernmental Oceanographic Commission’s (IOC) Global Ocean Observing System (GOOS) Regional Alliances including those for Africa, Black Sea, Mediterranean, Caribbean, Indian Ocean, Pacific Islands, North-East and South-East Asia, South-East Pacific	
36(c)	Build capacity in marine science, information and management, through, inter alia, promoting the use of environmental impact assessments and environmental evaluation and	RS for marine management	Thales, SODENA, IRD, CLS, Ministry of Research and New Technologies (France)	SEAGERH project	
			CLS	Data collection using Argos beacons	

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	reporting techniques, for projects or activities that are potentially harmful to the coastal and marine environments and their living and non-living resources		BRGM – BRLI – CNES – CIRAD – Ifremer - SCOT (France)	AGIL project for integrated coastal management	
			ASI	COSMO-SkyMed Programme for monitoring and managing coastlines and marine and inland waters, including ice monitoring. The Programme can also be used for scientific applications. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			ESCAP	Regional Space Applications Programme for Sustainable Development (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			UNESCO	Intergovernmental Oceanographic Commission's (IOC) Ocean Data and Information (ODIN) for Africa, the Caribbean and South America	http://ioc.unesco.org/iocweb/index.php
				IOC's "Regional Ocean Observing and Forecasting Systems for Integrated Management of Ocean and Coastal Environment and Natural Disasters in Africa" (ROOFS-AFRICA) project	http://ioc.unesco.org/goos/africa/ROOFS-AFRICA.htm
36(d)	Strengthen the ability of the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization, the Food and Agriculture Organization of the United Nations and other relevant international and regional and subregional organizations to build national and local capacity in marine science and the sustainable management of oceans and their	RS for marine science and sustainable management of oceans and their resources	CNES-CNRS-IRD-IPEV-Ifremer-MétéoFrance-SHOM	France's participation in the GOOS project with CORIOLIS and MERCATOR	
			WMO	Applications of Meteorology Programme	http://www.wmo.ch/web/aom/aom.html
			UNESCO	All Intergovernmental Oceanographic Commission's (IOC) programmes, including the Integrated Coastal Area Management (ICAM), Global Observing System (GOS) and International Oceanographic Data and Information Exchange (IODE) programmes, with the use RS data	http://ioc.unesco.org/iocweb/index.php

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	resources		SUPARCO, NGOs	Monitoring Coastal ecosystem and marine envt. through SRS technology.	
	- Disaster management -				
37(b)	Support the establishment of effective regional, subregional and national strategies and scientific and technical institutional support for disaster management	RS and GIS, satellite communications, GNSS for disaster management	BMVIT – Austrian Federal Ministry for Transport, Innovation and Technology	Disaster Management – Elaboration of an Austrian Action plan for the implementation of the International Charter for Space and Natural Disasters	
			CSA, CNES, CONAE, ESA, JAXA, NOAA, ISRO	International Charter “Space and Major Disasters”	
			EADS Astrium, CS-SI, CEREN, CNES, FDC, MétéoFrance, PONT Intervention, SCOT, French Ministry of Research and New Technologies (France)	PARAFEU to combat forest fires	
			EADS Astrium, Alcatel Space, MétéoFrance, Cemagref, BRGM, SPOT Image, SCOT, MSI, Sertit Irit, IMFT, Ministry of Research and New Technologies (France)	PACTES: flood prediction and prevention using space technology	
			ASI	COSMO-SkyMed Programme for monitoring, prevention and management of both natural and technological environmental disasters even in extreme usage conditions. The Programme is to start operating in 2007 and reach full capacity in 2008.	

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			Federal Government of Mexico/ Aragón Technology Centre at the National Autonomous University of Mexico	Possible nanosatellite project of focusing on earthquake prediction through the analysis of electrical and electromagnetic precursors which appear in the atmosphere in the days leading up to a powerful earthquake. Inter-institutional meeting to assess the need for a comprehensive policy on space matters at the federal level, 1 December, Tlatelolco, Federal District.	
			OOSA	Space technology and disaster management (STDM)	http://www.oosa.unvienna.org/sapidx.html , oosa@unvienna.org
				Regional Centres for Space Science and Technology Education	
			WMO	Natural Disaster Prevention and Mitigation Programme	
			UNOPS, UNITAR	Activities in support to disaster preparedness, capacity building and sustainable development	www.unosat.org
		RS and GIS information as decision making tools for policy makers and managers; development of forecasting and management models	UNESCO	IOC's "Regional Ocean Observing and Forecasting Systems for Integrated Management of Ocean and Coastal Environment and Natural Disasters in Africa" (ROOFS-AFRICA) project	http://ioc.unesco.org/goos/africa/ROOFS-AFRICA.htm
		Atmospheric Research using Space Technology for disaster management	SUPARCO/ISNET (OIC's Space Technology Network/OOSA)	Training in Space Technology and Disaster Management Program (STDM) is being organized by the OIC Countries	

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37(c)	Strengthen the institutional capacities of countries and promote international joint observation and research, through improved surface-based monitoring and increased use of satellite data, dissemination of technical and scientific knowledge, and the provision of assistance to vulnerable countries	RS and GIS for joint observation and research	CNES – ESA – NASA – LPCE – CETP – MPG	DEMETER (Detection of Electro-Magnetic Emissions Transmitted from Earthquake Regions)	
			CNES-CNRS, supported by IRMB and WRC	PICARD for determining solar forcing influence on Earth climate	
			ELTE Geophysics Department (Hungary)	Satellite data processing	
			ASI	COSMO-SkyMed Programme for scientific applications. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			Federal Government of Mexico/ Aragón Technology Centre at the National Autonomous University of Mexico	Possible nanosatellite project of focusing on earthquake prediction through the analysis of electrical and electromagnetic precursors which appear in the atmosphere in the days leading up to a powerful earthquake. Inter-institutional meeting to assess the need for a comprehensive policy on space matters at the federal level, 1 December, Tlatelolco, Federal District.	
			OOSA	Space Technology and Disaster Management (STDM)	http://www.oosa.unvienna.org/sapidx.html oosa@unvienna.org
				Regional Centres for Space Science and Technology Education	
			ESCAP	Regional Space Applications Programme for Sustainable Development in Asia and the Pacific (RESAP)	
			WMO	World Weather Watch Programme	http://www.wmo.ch/web/www/www.html
WMO Space Programme	http://www.wmo.ch/hinsman/satsun.html				
UNOPS, UNITAR	Activities in support to disaster preparedness, capacity building and sustainable development	www.unosat.org			

Action items in the Plan of Implementation (A/CONF.199/20, Resolution 2)		Relevant space applications	Space-related initiatives and programmes that could support the implementation of the action		Web-site(s) for further information
Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
		RS and GIS information as decision making tools for policy makers and managers; development of forecasting and management models; training and research as a key to poverty alleviation	UNESCO	IOC's "Regional Ocean Observing and Forecasting Systems for Integrated Management of Ocean and Coastal Environment and Natural Disasters in Africa" (ROOFS-AFRICA) project	http://ioc.unesco.org/goos/africa/ROOFS-AFRICA.htm
		RS and GIS information as decision making tools for policy makers and managers; development of forecasting and management models	UNESCO	Cross-cutting project "Application of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa"	http://ioc.unesco.org/goos/africa/cross-cutting.htm
		Atmospheric Research using Space Technology for Post Disaster Management	SUPARCO/ISNET (OIC's Space Technology Network/OOSA)	Institutional capabilities of Islamic countries is being strengthened using Space Technology and Disaster Management Program (STDM)	

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Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes			
37(d)	Reduce the risks of flooding and drought in vulnerable countries by, inter alia, promoting wetland and watershed protection and restoration, improved land-use planning, improving and applying more widely techniques and methodologies for assessing the potential adverse effects of climate change on wetlands and, as appropriate, assisting countries that are particularly vulnerable to those effects	RS and GIS for improved land use planning	Alcatel Space Industries (ASPI), Astrium, MétéoFrance, Cemagref, BRGM, SPOT Image, SCOT, MSI, Sertit Irit, IMFT, Ministry of Research and New Technologies (France)	PACTES			
			ELTE Geophysics Department (Hungary)	Research of river-basin Tisza			
			ASI	COSMO-SkyMed Programme for monitoring, prevention and management of both natural and technological environmental disasters even in extreme usage conditions. The Programme is to start operating in 2007 and reach full capacity in 2008.			
			OOSA	Space Technology and Disaster Management (STDM)	Regional Centres for Space Science and Technology Education	http://www.oosa.unvienna.org/sapidx.html oosa@unvienna.org	
			ESCAP	Regional Space Applications Programme for Sustainable Development (RESAP)			http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			WMO	Hydrology and Water Resources Programme	Natural Disaster Prevention and Mitigation Programme		http://www.wmo.ch/web/homs/1stpage.html
					UNOPS, UNITAR	Activities in support to disaster preparedness, capacity building and sustainable development	www.unosat.org

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Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
		RS and GIS information as decision making tools for policy makers and managers; development of forecasting and management models	UNESCO	IOC's "Regional Ocean Observing and Forecasting Systems for Integrated Management of Ocean and Coastal Environment and Natural Disasters in Africa" (ROOFS-AFRICA) project	http://ioc.unesco.org/goos/africa/ROOFS-AFRICA.htm
		Atmospheric Research using Space Technology for disaster management	Pakistan Meteorological Deptt., WAPDA	Under Space Technology and Disaster Management Program (STDM), Early Warning of these phenomena are conducted.	
37(e)	Improve techniques and methodologies for assessing the effects of climate change, and encourage the continuing assessment of those adverse effects by the Intergovernmental Panel on Climate Change	RS for assessment of the effects of climate change	CNES - NASA	TOPEX-Poseidon and the DORIS instrument for altimetric measurements (ocean circulation, etc.)	
				Jason-1 and the DORIS instrument for global altimetric measurements of the oceans, following TOPEX-Poseidon. General meteorology and climate understanding	
			CNES – MétéoFrance - IRD -SHOM	MERCATOR for ocean simulation on the basis of satellite observation for climate forecasting	
			CNES - CNRS, supported by IRMB and WRC	PICARD to determine solar forcing influence on Earth climate	
			CNES	PARASOL to determine influence of radiative impact of clouds and aerosols on climate change	

Action items in the Plan of Implementation (A/CONF.199/20, Resolution 2)		Relevant space applications	Space-related initiatives and programmes that could support the implementation of the action		Web-site(s) for further information
Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
			CNES - NASA	Cloud-Aerosol Lidar and Infrared Pathfinder Satellite (CALIPSO) study on radiative impact of clouds and aerosols on understanding of climate systems and global change	
			CNES – ESA – CDPI	SMOS for global observation of land surface humidity and ocean salinity; climate forecasting	
			CNES - CLS	SALP production, archiving and distribution of TOPEX-Poseidon, Jason, DORIS and ENVISAT mission products	
			CNES, the Belgian, Swedish and Italian space stations and the European Commission	VEGETATION instrument for crop and continental biosphere observation	
			CNES for DORIS and ESA for the ENVISAT satellite	DORIS instrument on ENVISAT	
			ASI	COSMO-SkyMed Programme for monitoring, prevention and management of both natural and technological environmental disasters even in extreme usage conditions. The programme can also perform monitoring of ice and ecology. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			OOSA	Space Technology and Disaster Management (STDM) Regional Centres for Space Science and Technology Education	http://www.oosa.unvienna.org/sapidx.html oosa@unvienna.org
			WMO	World Climate Programme	http://www.wmo.ch/web/wcp/wcp_prog.htm

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Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
		RS and GIS information as decision making tools for policy makers and managers; development of forecasting and management models	UNESCO	IOC's "Regional Ocean Observing and Forecasting Systems for Integrated Management of Ocean and Coastal Environment and Natural Disasters in Africa" (ROOFS-AFRICA) project	http://ioc.unesco.org/goos/africa/ROOFS-AFRICA.htm
		Atmospheric Research for assessment of the effects of climate change	SUPARCO, Pakistan Meteorological Dept.	Global Monitoring of various Atmospheric parameters are regularly monitored under Space Technology and Disaster Management Programme (STDM)	
37(h)	Develop and strengthen early warning systems and information networks in disaster management, consistent with the International Strategy for Disaster Reduction	RS and satellite communications for early warning	CSA, CNES, CONAE, ESA, JAXA, NOAA, ISRO	International Charter "Space and Major Disasters"	
			Hungarian Meteorological Service	Flood forecasting and management	
			ASI	COSMO-SkyMed Programme for monitoring, prevention and management of both natural and technological environmental disasters even in extreme usage conditions. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			FAO	Global Information and Early Warning System (GIEWS), which uses the Advanced Real Time Environmental Monitoring Information System (ARTEMIS)	http://www.fao.org/giews/english/index.htm , http://geoweb.fao.org
				Southern African Development Community (SADC) Regional Remote Sensing Unit with the use of ARTEMIS	http://metart.fao.org , www.sadc.int
		OOSA	Space Technology and Disaster Management (STDM)	http://www.oosa.unvienna.org/sapidx.html	

Action items in the Plan of Implementation (A/CONF.199/20, Resolution 2)		Relevant space applications	Space-related initiatives and programmes that could support the implementation of the action		Web-site(s) for further information
Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
				Regional Centres for Space Science and Technology Education	oosa@unvienna.org
			ESCAP	Regional Space Applications Programme for Sustainable Development (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			WMO	Natural Disaster Prevention and Mitigation Programme	
		RS and GIS information as decision making tools for policy makers and managers; development of forecasting and management models	UNESCO	IOC's "Regional Ocean Observing and Forecasting Systems for Integrated Management of Ocean and Coastal Environment and Natural Disasters in Africa" (ROOFS-AFRICA) project	http://ioc.unesco.org/goos/africa/ROOFS-AFRICA.htm
		Atmospheric Research/Monitoring for Early Warning.	SUPARCO/OOSA/WMO	Early Warning on a predicted disaster is publicized through SUPARCO's Web Site, and Media.	
37(i)	Develop and strengthen capacity at all levels to collect and disseminate scientific and technical information, including the improvement of early warning systems for predicting extreme weather events, especially El Niño/La Niña, through the provision of assistance to institutions devoted to addressing such events, including the International Centre for the Study of the El Niño phenomenon	RS, GNSS and satellite communications for early warning	CSA, CNES, CONAE, ESA, JAXA, NOAA, ISRO	International Charter "Space and Major Disasters"	
			ASI	COSMO-SkyMed Programme for monitoring, prevention and management of both natural and technological environmental disasters even in extreme usage conditions. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			OOSA	Space Technology and Disaster Management (STDM)	http://www.oosa.unvienna.org/sapidx.html
				Regional Centres for Space Science and Technology Education	oosa@unvienna.org
			ESCAP	Regional Space Applications Programme for Sustainable Development (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp

Action items in the Plan of Implementation (A/CONF.199/20, Resolution 2)		Relevant space applications	Space-related initiatives and programmes that could support the implementation of the action		Web-site(s) for further information
Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
			WMO	World Weather Watch Programme	http://www.wmo.ch/web/www/www.html
			OOSA, UNOPS	Serving the UN with satellite imagery and value adding products through the International Charter "Space and Major Disasters"	www.unosat.org , www.disasterscharter.org
		RS and GIS information as decision making tools for policy makers and managers; development of early warning systems for Africa	UNESCO	IOC's "Regional Ocean Observing and Forecasting Systems for Integrated Management of Ocean and Coastal Environment and Natural Disasters in Africa" (ROOFS-AFRICA) project	http://ioc.unesco.org/goos/africa/ROOFS-AFRICA.htm
37(j)	Promote cooperation for the prevention and mitigation of, preparedness for, response to and recovery from major technological and other disasters with an adverse impact on the environment in order to enhance the capabilities of affected countries to cope with such situations.	RS, satellite communications, GNSS for prevention, mitigation, preparedness, response and recovery	CSA, CNES, CONAE, ESA, JAXA, NOAA, ISRO	International Charter "Space and Major Disasters"	
			ASI	COSMO-SkyMed Programme for monitoring, prevention and management of both natural and technological environmental disasters even in extreme usage conditions. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			OOSA	Space Technology and Disaster Management (STDM)	http://www.oosa.unvienna.org/sapidx.html , oosa@unvienna.org
				Regional Centres for Space Science and Technology Education	
			ESCAP	Regional Space Applications Programme for Sustainable Development (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			WMO	Natural Disaster Prevention and Mitigation Programme	

Action items in the Plan of Implementation (A/CONF.199/20, Resolution 2)		Relevant space applications	Space-related initiatives and programmes that could support the implementation of the action		Web-site(s) for further information
Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
		Atmospheric Research using Space Technology for disaster management	SUPARCO/ISNET (OIC's Space Technology Network) OOSA	The stake holders from regional countries are trained on the subject under a collaboration program	
	<i>- Climate change -</i>				
38(d)	Build and enhance scientific and technological capabilities, inter alia, through continuing support to the Intergovernmental Panel on Climate Change for the exchange of scientific data and information especially in developing countries	Earth observation (EO) satellites and satellite communications for exchange of scientific data and information	CNES – CNRS - INSU	ETHER database on atmospheric chemistry	
			CNES – CLS – MétéoFrance – SHOM - CERFACS	AVISO ocean, altimetry and climate database	
			CNES – MétéoFrance – IRD - SHOM	MERCATOR for ocean simulation on the basis of satellite observation; climate forecasting	
			Hungarian Meteorological Service	Research of climate change (NOAA data)	
			ASI	COSMO-SkyMed Programme for ecological monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			FAO, UNEP	AFRICOVER/Land Cover Mapping; Global Land Cover Network (GLCN) Initiative	www.africover.org
			WMO	World Climate Programme	http://www.wmo.ch/web/wcp/wcp_prog.htm
			SUPARCO, Ministry of Environment	Preparation of inventory of green house gases as per the guidelines available in IPCC. Land /atmosphere studies using MODIS / ENVISAT data.	
	RS and GIS information as decision making tools for policy makers and managers; development of early warning systems for Africa	UNESCO	IOC's "Regional Ocean Observing and Forecasting Systems for Integrated Management of Ocean and Coastal Environment and Natural Disasters in Africa" (ROOFS-AFRICA) project	http://ioc.unesco.org/goos/africa/ROOFS-AFRICA.htm	

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Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
38(g)	Promote the systematic observation of the Earth's atmosphere, land and oceans by improving monitoring stations, increasing the use of satellites and appropriate integration of these observations to produce high-quality data that could be disseminated for the use of all countries, in particular developing countries	EO satellites for systematic observation of Earth's atmosphere, land and oceans	CNES – ESA - CDPI	SMOS for global observation of surface humidity of land and salinity of oceans; climate forecasting	
			CNES – ESA – NASA – LPCE – CETP – MPG	DEMETER for measuring geophysical parameters of the terrestrial ionosphere affecting earthquakes or volcanic activity	
			CNES – NASA	CALIPSO study of radiative impact of clouds and aerosols on understanding of climate systems and global change	
			CNES – ISRO	Megha-Tropiques for study of atmospheric water cycle in the intertropical band	
			CNES – EUMETSAT	Infrared atmospheric sounding interferometer (IASI) instrument of the METOP satellites for spectral analysis of the atmosphere and its chemical composition	
			ESA - Alcatel Space – Ifremer – MétéoFrance - MERCATOR-Ocean - CLS and DNV – NERSC – GTD – Starlab – NCMR – ESYS - SOS	Global Monitoring for Environment and Security (GMES) and Real Time Ocean Services for Environment and Security (ROSES) project	
			CNES-SPOT Image, supported by Belgium and Sweden	SPOT satellites	
			Alcatel Space - ESA	Medium Resolution Imaging Spectrometer (MERIS) instrument on ENVISAT for study of biosphere	
			CNES - NASA	TOPEX-Poseidon for altimetric measurements (ocean circulation etc.)	

Action items in the Plan of Implementation (A/CONF.199/20, Resolution 2)		Relevant space applications	Space-related initiatives and programmes that could support the implementation of the action		Web-site(s) for further information
Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
				Jason-1 for global altimetric measurements of the oceans, following TOPEX-Poseidon. General meteorology and climate understanding	
			CNES – ASI – INTA - BNRS	Optical and radar federated Earth observation (ORFEO) system	
			CNES - CNRS supported by WRC and IRMB	PICARD to determine solar forcing influence on Earth climate	
			CNES	PARASOL to determine influence of radiative impact of clouds and aerosols on climate change	
			Hungarian Meteorological Service	Agricultural surface physical parameters research	
			JAXA	Advanced Land Observing Satellite (ALOS)	
			ASI	COSMO-SkyMed Programme for ecological monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			SUPARCO	SGS and its upgrading for high-quality EO data.	
			ESCAP	Regional Space Applications Programme for Sustainable Development in Asia and the Pacific (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			FAO, UNEP	AFRICOVER/Land Cover Mapping: Global Land Cover Network (GLCN) Initiative	www.africover.org
			WMO	World Weather Watch Programme	http://www.wmo.ch/web/www/www.html
				WMO Space Programme	http://www.wmo.ch/hinsman/satsun.html
			UNESCO, WMO, UNEP	IOC - the Global Ocean Observing System (GOOS)	http://ioc.unesco.org/iocweb/index.php

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Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
38(h)	Enhance the implementation of national, regional and international strategies to monitor the Earth's atmosphere, land and oceans, including, as appropriate, strategies for integrated global observations, inter alia, with the cooperation of relevant international organizations, especially the specialized agencies, in cooperation with the United Nations Framework Convention on Climate Change	EO satellites for integrated global observations	Algerian Space Agency, SSTL	Disaster Monitoring Constellation Consortium DMC	
			ESA - EU	GMES European concept	
			Spot Image	SPOT series satellites	
			ASI - CNES - INTA - SNSB	ORFEO project	
			Hungarian Meteorological Service	Agricultural surface physical parameters research	
			ASI	COSMO-SkyMed Programme for ecological monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			SUPARCO	SRS/GIS applications program in different discipline areas.	
			FAO, UNEP	AFRICOVER/Land Cover Mapping; Global Land Cover Network (GLCN) Initiative	www.africover.org
			WMO	World Weather Watch Programme	http://www.wmo.ch/web/www/www.html
				WMO Space Programme	http://www.wmo.ch/hinsman/satsun.html
UNESCO	IOC's regional programme in the Caribbean (IOCARIBE), Western Pacific (WESTPAC)	http://ioc.unesco.org/iocweb/index.php			
UNESCO, WMO, UNEP	GOOS Regional Alliances, including those for Africa, Black Sea, Mediterranean, Caribbean, Indian ocean, Pacific Islands, North-East and South-East Asia, South-East Pacific	http://ioc.unesco.org/iocweb/index.php			
39(a)	Strengthen capacities of developing countries and countries with economies in transition to measure, reduce and assess the impacts of air pollution, including health impacts, and provide financial and technical support for these activities	RS for measurement of air pollution	CNES - MétéoFrance and French laboratories	PARASOL project to measure the radiative impact of aerosols on Earth	
			ACRI - ST - IPSL - MétéoFrance - LOA - Ministry of Research and New Technologies (France)	Ultraviolet Forecasting Operational Service (UFOS) for exploitation of stratospheric ozone measurements, cloud cover and atmospheric aerosol content, by ENVISAT (MERIS and Global Ozone Monitoring by Occultation of Stars (GOMOS))	

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Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
			ASI	COSMO-SkyMed Programme for ecological monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			SUPARCO	Air pollution monitoring using ground based equipment is regularly conducted (ESA & ENVISAT Data are helpful in such monitoring).	
			WMO	Atmospheric Research and Environment Programme	http://www.wmo.ch/web/arep/arep-home.html
39(c)	Further support the effective regime for the protection of the ozone layer established in the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol, including its compliance mechanism	EO satellites for monitoring ozone layer and verifying compliance with the Montreal Protocol	French, Belgian and Swedish space agencies and laboratories	Odin atmospheric mission to investigate atmospheric chemistry	
			ASI	COSMO-SkyMed Programme for ecological monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			SUPARCO, Ministry of Env't.	Monitoring trend of ozone in the Asian region using TOMS / GOME data	
			WMO	Atmospheric Research and Environment Programme	http://www.wmo.ch/web/arep/arep-home.html
			WMO Space Programme	http://www.wmo.ch/hinsman/satsun.html	
	- Agriculture -				
40(b)	Develop and implement integrated land management and water-use plans that are based on sustainable use of renewable resources and on integrated assessments of socio-economic and environmental potentials and	RS and GIS for management of land and water resources	MétéoFrance – CETP – GEOSYS – AFEID	CITRAM irrigation advisory project. Irrigation management, soil water determination	
			INRA – CNRM – MétéoFrance – Astrium – SCOT	APOGEE project for land use planning assistance at regional level	

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Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
	strengthen the capacity of Governments, local authorities and communities to monitor and manage the quantity and quality of land and water resources		CIRAD – IGN - ministries of the environment of the relevant countries, Ministry of Research and New Technologies (France)	SHERPA hydrological and environmental monitoring project for Central America	
			ITCF – GEOSYS – Ministry of Research and New Technologies (France)	SADAISI project, access by farmers to satellite images directly from the Internet	
			CIRAD – AMIS – Spot Image	SUCRETTE project: sugar cane teledetection monitoring system	
			Animation and graphic portfolio manager (AGPM) Technique – INRA – GEOSYS - Vivadour, Ministry of Research and New Technologies (France)	AGROCOM project for optimum maize cultivation	
			ESA - EU	Applications of the Galileo European satellite navigation system for precision agriculture	
			ASI	COSMO-SkyMed Programme for monitoring and managing forestry and agriculture. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			SUPARCO	SRS Applications program	
			ESCAP	Regional Space Applications Programme for Sustainable Development (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			FAO, UNEP	AFRICOVER/Land Cover Mapping: Global Land Cover Network (GLCN) Initiative	www.africover.org
			FAO	AsiaCover	www.asiacover.org
				AgrometShell (AMS)	
			FAO, WFP, UNEP	GeoNetwork	www.fao.org/geonetwork
		WMO	Applications of Meteorology Programme	http://www.wmo.ch/web/aom/aom.html	

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Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
			FAO, UNESCO, UNEP, WMO	Global Terrestrial Observing System (GTOS)	www.fao.org/gtos
			UNOPS, UNITAR	Activities in support to land and water management, capacity building and sustainable development	www.unosat.org
		GIS for integrated information management	16 UN organs, coordinated by WHO	Second Administrative Level Boundaries data set (SALB)	http://www3.who.int/whosis/gis/salb/salb_home.htm
		RS and GIS information as decision making tools for policy makers and managers; development of forecasting and management models; training and research as a key to poverty alleviation	UNESCO	Cross-cutting project "Application of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa"	http://ioc.unesco.org/goos/africa/cross-cutting.htm
40(c)	Increase understanding of the sustainable use, protection and management of water resources to advance long-term sustainability of freshwater, coastal and marine environments	RS and GIS for water resources management	BRGM, CLS, AETS, Ministry of Research and New Technologies (France)	RESSOURCE: Project to provide space telecommunications support for water data collection	
			ASI	COSMO-SkyMed Programme for monitoring and managing coastlines and marine and inland waters, including ice monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			SUPARCO	SRS/GIS based monitoring for conservation and preservation of fresh water resources.	
			ESCAP	Regional Space Applications Programme for Sustainable Development in Asia and the Pacific (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp

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Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
			FAO, UNEP	AFRICOVER/Land Cover Mapping; Global Land Cover Network (GLCN) Initiative	www.africover.org
			FAO	AsiaCover	www.asiacover.org
			FAO, WFP, UNEP	Geonetwork	www.fao.org/geonetwork
			FAO, UNESCO, UNEP, WMO	Global Terrestrial Observing System (GTOS)	www.fao.org/gtos
			UNESCO	IOC's uses of ocean based RS data to improve forecasts of rainfall in coastal areas; World Water Assessment Programme (WWAP)	http://ioc.unesco.org/iocweb/index.php
				Cross-cutting project "Application of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa"	http://ioc.unesco.org/goos/africa/cross-cutting.htm
				World Water Assessment Programme (WWAP)	http://www.unesco.org/water/wwap/index.shtml
40(d)	Promote programmes to enhance in a sustainable manner the productivity of land and the efficient use of water resources in agriculture, forestry, wetlands, artisanal fisheries and aquaculture, especially through indigenous and local community-based approaches	RS and GIS to manage the use of water resources	BRGM, CLS, AETS, Ministry of Research and New Technologies (France)	RESSOURCE: Project to provide space telecommunications support for water data collection	
			ASI	COSMO-SkyMed Programme for monitoring and managing forestry and agriculture. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			SUPARCO	SRS Applications program for natural resource monitoring	
			ESCAP	Regional Space Applications Programme for Sustainable Development (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			FAO, UNEP	AFRICOVER/Land Cover Mapping; Global Land Cover Network (GLCN) Initiative	www.africover.org
			FAO	AsiaCover	www.asiacover.org
				AgrometShell (AMS)	
			FAO, WFP, UNEP	GeoNetwork	www.fao.org/geonetwork
			FAO, UNESCO, UNEP, WMO	Global Terrestrial Observing System (GTOS)	www.fao.org/gtos

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Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
				IOC's uses of ocean based RS data to improve forecasts of rainfall in coastal areas; World Water Assessment Programme (WWAP)	http://ioc.unesco.org/iocweb/index.php
			UNESCO	World Water Assessment Programme (WWAP)	http://www.unesco.org/water/wwap/index.shtml
		GIS for integrated information management	16 UN organs, coordinated by WHO	Second Administrative Level Boundaries data set (SALB)	http://www3.who.int/whosis/gis/salb/salb_home.htm
40(j)	Reverse the declining trend in public sector finance for sustainable agriculture, provide appropriate technical and financial assistance, and promote private sector investment and support efforts in developing countries and countries with economies in transition to strengthen agricultural research and natural resource management capacity and dissemination of research results to the farming communities	RS and GIS for natural resource management	BRGM, CLS, AETS, Ministry of Research and New Technologies (France)	RESSOURCE: Project to provide space telecommunications support for water data collection	
			ASI	COSMO-SkyMed Programme for monitoring and managing forestry and agriculture. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			SUPARCO, IUCN	SRS/GIS based pilot projects and country-wide applications of the current status of the inland and entire region.	
			ESCAP	Regional Space Applications Programme for Sustainable Development (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			FAO, UNEP	AFRICOVER/Land Cover Mapping; Global Land Cover Network (GLCN) Initiative	www.africover.org
			FAO	AsiaCover	www.asiacover.org
			FAO, WFP, UNEP	GeoNetwork	www.fao.org/geonetwork
			FAO, UNESCO, UNEP, WMO	Global Terrestrial Observing System (GTOS)	www.fao.org/gtos
			UNOPS	Global Mapping Grant Facility	www.unosat.org
40(n)	Enhance international cooperation to combat the illicit cultivation of narcotic plants, taking into account	RS and GIS for monitoring illicit cultivation of	SUPARCO/ Narcotics Control Division, Govt. of Pakistan	Provision of RS data/ value added products to effectively control Narcotics Cultivation etc.	

Action items in the Plan of Implementation (A/CONF.199/20, Resolution 2)		Relevant space applications	Space-related initiatives and programmes that could support the implementation of the action		Web-site(s) for further information
Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
	their negative social, economic and environmental impacts	narcotic plants	FAO, UNESCO, UNEP, WMO	Global Terrestrial Observing System (GTOS)	www.fao.org/gtos
	- Desertification -				
41(a)	Mobilize adequate and predictable financial resources, transfer of technologies and capacity-building at all levels	EO satellites for monitoring desertification	SPOT Image	SPOT satellite vegetation instrument	
			ASI – CNES – INTA - SNSB	ORFEO project	
			ASI	COSMO-SkyMed Programme for ecological monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			SUPARCO	Monitoring desertification using RS data	
			WMO	Technical Cooperation Programme	http://www.wmo.ch/web/tco/TCOHome.html
			WMO	WMO Space Programme	http://www.wmo.ch/hinsman/satsun.html
41(b)	Formulate national action programmes to ensure timely and effective implementation of the Convention and its related projects, with the support of the international community, including through decentralized projects at the local level	EO satellites for monitoring desertification	SPOT Image	SPOT satellite vegetation instrument	
			ASI – CNES – INTA - SNSB	ORFEO project	
			ASI	COSMO-SkyMed Programme for ecological monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			WMO	WMO Space Programme	http://www.wmo.ch/hinsman/satsun.html
41(d)	Integrate measures to prevent and combat desertification as well as to mitigate the effects of drought through relevant policies and programmes, such as land, water and forest management, agriculture, rural development, early warning systems,	RS and GIS for land, water and forest management, early warning systems, environment monitoring and	EADS – Geomatics – Cemagref – CESBIO – ONF - Media France, Ministry of Research and New Technologies (France)	METIS project on forest management and control	
			Hungarian Meteorological Service	Surface parameters – climate change modeling (ALADIN – HU)	

Action items in the Plan of Implementation (A/CONF.199/20, Resolution 2)		Relevant space applications	Space-related initiatives and programmes that could support the implementation of the action		Web-site(s) for further information
Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
	environment, energy, natural resources, health and education, and poverty eradication and sustainable development strategies	assessment	ASI	COSMO-SkyMed Programme for ecological monitoring, monitoring and managing coastlines and marine and inland waters, including ice monitoring, and for monitoring and managing forestry and agriculture. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			SUPARCO	RS Application Program	
			ESCAP	Regional Space Applications Programme for Sustainable Development (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			WMO	Hydrology and Water Resources Management Programme	http://www.wmo.ch/web/homs/1stpage.html
				WMO Space Programme	http://www.wmo.ch/hinsman/satsun.html
			FAO, WFP, UNEP	GeoNetwork	www.fao.org/geonetwork
			UNESCO	World Water Assessment Programme (WWAP)	http://www.unesco.org/water/wwap/index.shtml
		RS and GIS information as decision making tools for policy makers and managers; development of forecasting and management models; training and research as a key to poverty alleviation	UNESCO	Cross-cutting project "Application of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa"	http://ioc.unesco.org/goos/africa/cross-cutting.htm
41(e)	Provide affordable local access to	EO satellites and	SPOT Image, Eutelsat	SPOT satellite, Eutelsat fleet	

Action items in the Plan of Implementation (A/CONF.199/20, Resolution 2)		Relevant space applications	Space-related initiatives and programmes that could support the implementation of the action		Web-site(s) for further information
Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
	information to improve monitoring and early warning related to desertification and drought	satellite communications to improve monitoring and early warning	ASI	COSMO-SkyMed Programme for ecological monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			ESCAP	Regional Space Applications Programme for Sustainable Development (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			WMO	World Weather Watch Programme	http://www.wmo.ch/web/www/www.html
				WMO Space Programme	http://www.wmo.ch/hinsman/satsun.html
		FAO, WFP, UNEP	GeoNetwork	www.fao.org/geonetwork	
41(g)	Improve the sustainability of grassland resources through strengthening management and law enforcement and providing financial and technical support by the international community to developing countries	RS for the management of grassland resources	ASI	COSMO-SkyMed Programme for ecological monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			ESCAP	Regional Space Applications Programme for Sustainable Development (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
	- <i>Mountain ecosystems</i> -				
42(b)	Implement programmes to address, where appropriate, deforestation, erosion, land degradation, loss of biodiversity, disruption of water flows and retreat of glaciers	RS for monitoring deforestation, erosion, land degradation, loss of biodiversity, etc.	ASA and Austrian Federal Ministry for Transport, Innovation and Technology funded projects: JR, GEOSPACE, ENVEO (Austria)	“Management of Natural Resources in Alpine Regions by Advanced Remote Sensing Techniques”, Project within the framework of the Austrian Space Application Programme	
			EADS – Geomatics – Cemagref – CESBIO – ONF - Media France, French Ministry of Research and New Technologies (France)	METIS project on forest management and control	

Action items in the Plan of Implementation (A/CONF.199/20, Resolution 2)		Relevant space applications	Space-related initiatives and programmes that could support the implementation of the action		Web-site(s) for further information
Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
			ASI	COSMO-SkyMed Programme for ecological monitoring, monitoring and managing coastlines and marine and inland waters, including ice monitoring, and for monitoring and managing forestry and agriculture. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			ESCAP	Regional Space Applications Programme for Sustainable Development in Asia and the Pacific (RESAP)	http://www.unescap.org/icstd/SPACE/resap/resap_main.asp
			WMO	WMO Space Programme	http://www.wmo.ch/hinsman/satsun.html
			UNESCO	Man and Biosphere (MAB) programme and its Biosphere Reserve Integrated Monitoring (BRIM) initiative	http://www.unesco.org/mab/index.htm
				Programme for Community Multimedia Centre	http://portal.unesco.org/ci/ev.php?URL_ID=1263&URL_DO=DO_TOPIC&URL_SECTION=201&reload=1075742490
				Cross-cutting project "Application of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa"	http://ioc.unesco.org/goos/africa/cross-cutting.htm
42(d)	Implement programmes to promote diversification and traditional mountain economies, sustainable livelihoods and small-scale production systems, including specific training programmes and better access to national and international markets, communications and transport planning, taking into account the particular sensitivity of mountains	Satellite communications for better access to markets	UNESCO	Programme for Community Multimedia Centers	
				Man and Biosphere (MAB) programme and its Biosphere Reserve Integrated Monitoring (BRIM) initiative	
	- Biodiversity-				

Action items in the Plan of Implementation (A/CONF.199/20, Resolution 2)		Relevant space applications	Space-related initiatives and programmes that could support the implementation of the action		Web-site(s) for further information
Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes	
44(f)	Promote concrete international support and partnership for the conservation and sustainable use of biodiversity, including in ecosystems, at World Heritage sites and for the protection of endangered species, in particular through the appropriate channelling of financial resources and technology to developing countries and countries with economies in transition;	RS and GIS for monitoring biodiversity at World Heritage sites	CLS	Data collection using Argos beacons	
			ASI	COSMO-SkyMed Programme for ecological monitoring. The Programme is to start operating in 2007 and reach full capacity in 2008.	
			SUPARCO, WWF	Conservation of precious wetland resources in the country through the integration of SRS/GIS databases.	
			UNESCO	Man and Biosphere (MAB) programme and its Biosphere Reserve Integrated Monitoring (BRIM) initiative	http://www.unesco.org/mab/index.htm
			Use of space technology for monitoring World Heritage sites	http://whc.unesco.org/nwhc/pages/home/pages/homepage.htm	
	RS and GIS information as decision making tools for policy makers and managers; development of forecasting and management models; training and research as a key to poverty alleviation	UNESCO	Cross-cutting project "Application of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa"	http://ioc.unesco.org/goos/africa/cross-cutting.htm	
	- Forest management -				
45(f)	Create and strengthen partnerships and international cooperation to facilitate the provision of increased financial resources, the transfer of environmentally sound technologies, trade, capacity-building, forest law	RS and GIS for integrated land and resource management	ASA, Austrian Federal Ministry for Transport, Innovation and Technology and European Space Agency (ESA) funded projects: GEOVILLE, ARCS and TU	"Testing of Novel Earth Observation Systems for Supporting Quality Control Activities required by the Kyoto-Protocol"	
				Acquisition of LULUCF3-Parameters (Land Use, Land Use Change and Forestry – LULUCF)	

Action items in the Plan of Implementation (A/CONF.199/20, Resolution 2)		Relevant space applications	Space-related initiatives and programmes that could support the implementation of the action		Web-site(s) for further information	
Para.	Action item		Agencies / institution(s) involved	Initiatives/Programmes		
	enforcement and governance at all levels and integrated land and resource management to implement sustainable forest management, including the proposals for action of the Intergovernmental Panel on Forests/Intergovernmental Forum on Forests		Wien – IPF (Austria)	Project within the framework of the Austrian Space Application Programme		
					A GeoVille led Kyoto project focusing on LULUCF project activities funded by ESA-ESRIN	
				EADS – Geomatics – Cemagref – CESBIO – ONF - Media France, Ministry of Research and New Technologies (France)	METIS project on forest management and control	
				ASI	COSMO-SkyMed Programme for monitoring and managing forestry and agriculture. The Programme is to start operating in 2007 and reach full capacity in 2008.	
				SUPARCO, Forestry department, Govt. of Pakistan	Detailed Forest Cover Mapping of Pakistan using High Resolution SPOT XS Data	
				FAO, WFP, UNEP	GeoNetwork	www.fao.org/geonetwork
				UNESCO	Man and Biosphere (MAB) programme and its Biosphere Reserve Integrated Monitoring (BRIM) initiative	
					Cross-cutting project “Application of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa”	http://ioc.unesco.org/goos/africa/cross-cutting.htm
		GIS for integrated information management	16 UN organs, coordinated by WHO	Second Administrative Level Boundaries data set (SALB)	http://www3.who.int/whosis/gis/salb/salb_home.htm	
	- Mining -					
46(c)	Foster sustainable mining practices through the provision of financial, technical and capacity-building	RS for detection and management of minerals	SUPARCO, Geological Survey of Pakistan	Provision of relevant SRS data and consultation to government agencies.		

Action items in the Plan of Implementation (A/CONF.199/20, Resolution 2)		<i>Relevant space applications</i>	<i>Space-related initiatives and programmes that could support the implementation of the action</i>		<i>Web-site(s) for further information</i>
<i>Para.</i>	<i>Action item</i>		<i>Agencies / institution(s) involved</i>	<i>Initiatives/Programmes</i>	
	support to developing countries and countries with economies in transition for the mining and processing of minerals, including small-scale mining, and, where possible and appropriate, improve value-added processing, upgrade scientific and technological information and reclaim and rehabilitate degraded sites		UNESCO	Mineral Resources Sustainability Programme (MRSD)	