

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

Water management

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
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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 IMG I – 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			

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			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, 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	RS and GIS for integrated river basin watershed	BRGM, CLS, AETS, Ministry of Research and New Technologies (France)	RESSOURCE: Project to use space telecommunications for water data collection	

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	river basin, watershed and groundwater management and introduce measures to improve the efficiency of water infrastructure to reduce losses and increase recycling of water	and groundwater management	ELTE Geophysics Department (Hungary)	Research of river-basin Tisza	
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			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	
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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
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	
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			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	

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			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
			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	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.	

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	networks and water resources databases and the development of relevant national indicators.		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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28.	Improve water resource management and scientific understanding of the water cycle through cooperation in joint observation and research, and for	RS and GIS for water resource management and scientific	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	

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	this purpose encourage and promote knowledge-sharing and provide capacity-building and the transfer of technology, as mutually agreed, including remote-sensing and satellite technologies , particularly to developing countries and countries with economies in transition.	understanding of the water cycle	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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			WMO	Hydrology and Water Resources Programme	http://www.wmo.ch/web/homs/hwrpframes.html
				WMO Space Programme	http://www.wmo.ch/index-en.html
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