

Item	Activity	IHP themes addressed	IAH-MAR objectives	Partners (with member states)	Publications	Training programs / meetings	Member States	UNESCO resources requested
1	Communication of MAR program aims and partnerships, via brochure and updating of web page including with outcomes of below..	4.3, 5.1	5 (a),(b)	<u>IAH</u> , UNESCO	Brochure, and web doc		Awareness and dissemination	Cost of publication
2	Wise Strategies for Recharge Enhancement in Arid and Semi Arid Areas. Includes role of MAR in groundwater and catchment management, and water conservation	1.1, 1.3, 2.4, 3.1, 3.4, 3.5, 4.3	1(1), 1(2)(a) 6(a)	<u>IAH</u> , UNESCO	Wise strategies booklet/web doc	UNESCO/IAEA/IAH Workshop at ISAR4 WWF3 Mar 2003 Regional workshops 2003-2007	Review draft, disseminate publication, host workshops	Cost of publication and workshops
3	Sub-surface water storage to cope with climate change – (a) climate change and storage needs, (b) status report on national MAR, (c) MAR needs in selected countries, (d) WWF3 report (assumes climatic change and water storage needs are addressed by DW&C)	2.1, 3.1	4.(a)	<u>IAH</u> , GWMATE, FAO, WMO, IWME, ASCE, USGS, UNESCO, Dialog on W&C & others	3 fact sheets (brochures)+ final report	UNESCO/IAEA/IAH Workshop at ISAR4 WWF3 Mar2003	Awareness of member states where climate change is increasing need for storage	Partial contribution to publication costs
4	Recharge and sustainable use of groundwater in arid and semi-arid Africa ** assumes natural and incidental recharge components addressed by IGBP (a) specs for MAR requirements, (b) prelim maps of MAR potential	3.1	6(a)	<u>IGBP</u> , SADC, UNEP, IHE, <u>IAH</u> , BGS, GWMATE, UNESCO	Contrib. To Wise Strategies (above)	Workshop, 7-8 June 02 Gaborone, Botswana UNESCO/IAEA/IAH Workshop at ISAR4	awareness of African member states	
5	Augmenting groundwater resources by artificial recharge (AGRAR). Evaluation of effectiveness of MAR in India, Nepal, (a) report May 02 - overview, (b) report June 05- case studies and guidelines	3.1, 4.2, 4.4, 4.5	2(a)	<u>BGS</u> , DFID, <u>IAH</u> , govt agencies, NGO's and Universities in India & Nepal, UNESCO	Overview report May 02; case study report Jun 05, guidelines Jun05	UNESCO/IAEA/IAH Workshop at ISAR4 Annual Indian workshop(s) based on case studies	Awareness of member states	Contribution to web-site maintenance
6	Health risks in aquifer recharge with reclaimed water	3.1, 4.4	2(b), 6(a)	<u>WHO</u> , <u>IAH</u> , UNESCO	Expert meeting Report (Budapest 2001), Technical guidance document	UNESCO/IAEA/IAH Workshop at ISAR4 Crete conference 2002. Regional training workshops 2003-07	Awareness of member states, Disseminate report, host workshops	Contribution to workshop costs
7	Risk assessment of wastewater reuse on groundwater quality	3.1, 4.4	6(a)	<u>IAHS</u> , <u>WHO</u> , <u>IAH</u> , UNESCO	Symposium proceedings, CD ROM	Sapporo Symp, Jul 2003		

Item	Activity	IHP themes addressed	IAH-MAR objectives	Member States and Partners	Publications	Training programs / meetings	Other outputs	UNESCO resources requested
8	Conduct 4 th international symposium on artificial recharge (ISAR4) and UNESCO/IAEA/IAH workshop on MAR evaluation	5.2	6(a), 6(b)	IAH, UNESCO, IAEA, FAO, WHO, WMO,	proceedings	UNESCO/IAEA/IAH Workshop at ISAR4 IAH-MAR plenary	attendance by water-scarce member states	Partial support for travel
9	Rainwater harvesting for agricultural purposes- economic, environmental & social evaluation at selected sites	3.1, 5.2	1(2)(a)	FAO, IAH, CSIRO, UNESCO	Report & journal paper, Workshop notes	UNESCO/IAEA/IAH Workshop at ISAR4 Regional Workshops 2003-7	Awareness by member states	Possible partial contribution to publication costs
10	Promoting appropriate use of isotopes to evaluate MAR.	3.1, 5.1	2(a)	IAEA, UNESCO, IAH	Report on UAE demonstration site, workshop notes	UNESCO/IAEA/IAH Workshop at ISAR4 Regional workshops 2003-7	Awareness by water-scarce member states	
11	International review of installed capacity of MAR and policies and guidelines for MAR	3.1	4(a), 3(a)	IAH, UNESCO WAPP, CSIRO,	Reports, 2003 & 2007	Regional workshops 2003-7	Inputs from Member States	
12	Assembly of data base of publications on MAR, and overview of research on improved understanding of subsurface processes, & continuous improvement in MAR design, operation, maintenance and monitoring & ongoing identification of research priorities	3.1, 5.2	2(a), 2(b)	IAH, UNESCO, CSIRO, Vivendi, BGS, DFID	Annual reports, web page	Regional workshops 2003-7	Inputs from Member States	
13	Perform research of high priority to fill needed gaps identified by IHP Working Group, and aim to raise priority of MAR among research funding agencies	2.4, 5.1	2(a)	IAH, UNESCO	Theses, journal papers, reports	Regional workshops 2003-7 Postgraduate training	Awareness of member states	Alert UNESCO Centres and Chairs
14	<i>Develop decision support tool for MAR</i>	2.4		prospective future activity	Theses, journal papers, reports	Regional workshops 2004-7 Postgraduate training	Inputs from member states	To be determined
15	<i>Enhance water resources management of coastal zones</i>	3.4		prospective future activity	Theses, journal papers, reports	Regional workshops 2004-7 Postgraduate training	Inputs from member states	To be determined

16	<i>Search for low cost technology for brackish water reclamation in urban and rural areas</i>	3.5		prospective future activity	Theses, journal papers, reports	Regional workshops 2004-7 Postgraduate training	Inputs from member states	To be determined

Projects: train the trainer – focus expertise in UNESCO Centres or other as appropriate, develop research projects in assoc with member states, encourage scholarships and operating funds for research students, provide for administration of program and production of annual status reports on all activities and of program as a whole, provide for web page, generate sets of resource materials relevant for regional workshops.

Acronyms:

ASCE	American Society of Civil Engineers
BGS	British Geological Survey
CSIRO	Commonwealth Scientific and Industrial Research Organisation (Australia)
DFID	Department for International Development
DW&C	Dialogue on Water and Climate
FAO	Food and Agriculture Organisation
GWMATE	A Groundwater Network of World Bank
IAEA	International Atomic Energy Agency
IAH	International Association of Hydrogeologists
IAH-MAR	IAH Commission on Management of Aquifer Recharge
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USGS	United States Geological Survey
WHO	World Health Organisation
WMO	World Meteorological Organisation
WWF3	3 rd World Water Forum, Kyoto, March 2003