Theme	**3. Managing and protecting resources and their supply systems to meet human and environmental needs**
Topic	**3.4 Managing and protecting surface, ground, (soil) and rain water**
Main Question	How can green water (land) management become integral part of IWRM, improving water productivity for food and biofuel production and other ecosystem services?
Related sub-questions	*Question 1: How do green and blue water support food and biofuel production and other ecosystem services globally and in different regions / countries, now and in future?* *Question 2: What is the potential for improving green and blue water productivity in all their uses, what are the tradeoffs for different management options?* *Question 3: What incentives are needed for wider adoption of some of the well known interventions in soil / land / green water management ?* *Question 4: How can truely integrated water and land management be mainstreamed into national policies and legislation?*
<u>General introduction</u>	Freshwater assessments, also those addressing climate change impacts, focus on a small fraction of the available resource, i.e. blue water, only. If green water, which is responsible for about 90% of all food production, is included, current and future patterns of scarcity change drastically. Also biofuel production, carbon sequestration and a range of other ecosystem services depend largely or exclusively on green water. A new global freshwater assessment has been initiated, involving a range of key global water, crop and vegetation modelling groups, which quantifies green and blue water fluxes and productivities. It's results deserve the attention of policy and decision makers in the water sector. *Resulting Question 1: How do green and blue water support food and biofuel production and other ecosystem services globally and in different regions / countries, now and in future?* ---------- Green and blue water productivities vary widely between different regions, due to different climatic, agro-ecological and socio-economic conditions and available technologies. In many regions less than half of the water returning to the atmosphere from cropland is productive transpiration, the rest is unproductive evaporation. There is enormous potential, and a wide range of technologies is available, to improve this ratio towards higher water productivity. Productivity increase through better management of green and blue water can mitigate resource overexploitation and support adaptatation to future climate and other stresses. Upscaling of management options that also reduce runoff (e.g. water harvesting) has to be planned in a basin-context, taking into account upstream-downstream links and tradeoffs. Agricultural (virtual water) trade can help to improve overall water productivity, by shifting production towards more productive and wetter regions, but associated costs and benefits in the exporting and importing countries need to be evaluated for each case individually. *Resulting Question 2: What is the potential for improving green and blue water productivity in all their uses, what are the tradeoffs for different management options?* ---------- A wide range of soil and water conservation options has been successfully tested

	around the world – see e.g. WOCAT database. However, these options have rarely been adopted at large scale. Upscaling and outscaling are generally missing. Also, the link to IWRM in a basin-context is generally missing. Incentives have to be provided, that bridge across temporal and spatial scales: the long-term benefits have to outweigh short term profits, and external - in particular downstream - effects have to become part of decision making. Payments for environmental / watershed services, such as Green Water Credits have successfully been tested. They have the potential to achieve these goals, but there are still a number of obstacles when operationalizing PES schemes. These incentive schemes need to be adapted further to the respective local and regional conditions for integrating them more widely in water and land management strategies. *Resulting Question 3: What incentives are needed for wider adoption of some of the well known interventions in soil / land / green water management ?* ---------- Water sector reforms have been initiated in all regions and in many countries. They are oriented along the Dublin principles, such as valueing water in all its uses. However the principle of linking land and water uses across the whole catchment (which is also a central element of the GWP IWRM definition) is usually neglected. Sectoral divisions often prevent the joint management of water and land in national and basin contexts. In view of the adaptation needs to future climate change as well as other pressures, this fragmented management and governance approach has to be overcome. *Resulting Question 4: How can truely integrated water and land management be mainstreamed into national policies and legislation?*
(Types of) Organizations to be involved in topic consultations	Associations: farmers / water user associations, bio-fuel producers International Agencies: FAO, IFAD, UNEP, UNDP, WTO National Governments (ministries of finance/economic affairs/water/agriculture /environment/spatial planning as well as water authorities) Professional Associations: ICID Research Institutions: IWMI, IFPRI, ICARDA, SEI Multilateral and bilateral donors: World Bank, AFDB, ADB, national donors Environmental agencies / NGOs: WWF, IUCN Related national organisations, NGOs and local civil society, e.g. basin commissions, regional and district councils, agricultural extension services etc
Process of paper and session development:	1. Draft 1 of topic scoping paper to be sent to key institutions for comments 2. Improved draft to be placed on website 3. Improved draft with comments received to be discussed at the February coordinators meeting to: a. Agree on key questions b. Agree on the topic document so that it can be placed on the Forum web-site c. Agree on key stakeholders to take part in the development of the topic d. Agree on consultation process: relevant meetings with key stakeholders e. Agree on the process and actors to develop the forum session.