

Theme 3 .Managing and protecting water resources and their supply systems to meet human and environmental needs

Topic 3.2 Ensuring adequate water resources and storage infrastructure to meet agricultural, energy and urban needs.

Main Question. How can the increasing demands of water and the need of infrastructure be achieved in the framework of sustainable development?

Related sub-questions.

Question 1. With the situation of the water crisis, water security, and water poverty in the world, how should be the water development and management to reach a sustainable development? Which are the challenges for greater access to water and energy?

Question 2. Which are the best approaches for the water security in connection with the Global change? How to implement the Integrated Water Resources Management in the different countries?

Question 3. How much storage do we need in the future? What type of storage and where?

Question 4. How to ensure that the projects and infrastructures are applied for the human growth and the sustainable development?

General introduction

Water is an essential resource for the life, the human development and the conservation of the ecosystems. Water is used for many different and sometimes conflicting purposes: Agriculture, water supply, sanitation, energy, navigation, environment, etc. How do we manage the multipurpose nature of water?

Due to the irregular distribution in the time and to its uneven localization in the space, numerous regions of the world have serious problems of water. In many developed countries there are situations of water stress that challenge the water resources management, and droughts and floods produce significant economic and environmental damages. On the other hand, many emergent and developing countries are in a situation of water poverty that affects the public health, and it is a great impediment for human grown and development. In and of itself among the targets of the MDG it highlights the reduction in, 2015,of the half of the population without water access and sanitation, being debated the proposal of its total disappearance at year 2025. For that, it is essential to develop and to apply sustainable policies of water development and management, and to implement urgent actions to mitigate this chaotic situation.

Resulting Question 1. With the situation of the water crisis, water security, and water poverty in the world, how should be the water development and management to reach a sustainable development? Which are the challenges for greater access to water and energy?

The Global change means the population's growth, which can reach some 8 billion in 2025 and 9 billion in 2050, the urbanization, with near two-thirds of the world population living in cities in 2050, and the variation and climatic change. With the forecasts of the decrease of the water resources and its irregularity in the time, in numerous regions that already present currently problems of water scarcity and water poverty, being able to affect with more intensity to the poor people who are more vulnerable to the global changes. With all that, it will increase the anthropogenic pressures on the water and energy resources, for what it will be necessary to implement new development measures for the management and adaptation to this new situation. It will be necessary a wider and more comprehensive vision in the water resources management, with the development of new policies of Integrated Water Resources Management. These new orientations should be adapted to the situations of each region and country, always into the framework of sustainable development of the water resources and the conservation of the environment.

Question 2. Which are the best approaches for the water security in connection with the Global change? How to implement the Integrated Water Resources Management in the different countries?

Currently the total storage of the reservoirs amount about 7.000 Km³ that suppose a contribution of about 30% to the available water resources in the world. The water that is stored and regulated by dams and reservoirs provides irreplaceable water resources and benefits to water supply, irrigation, hydropower, flood mitigation, river navigation, recreation, tourism, etc.

The socioeconomic analyses shows that the stock of infrastructures (for water supply, sanitation, dams and reservoirs, electricity, and hydropower) that a country possesses is generally closely linked to its socio-economic development and that these infrastructures are essential for a country's development.

The developed countries have a large and varied inventory of water infrastructures. It is vital for the socio-economic development of emerging and developing countries the construction of new infrastructures, to reach the adequate stock of energy and water infrastructures, in order to have available sufficient supplies of water and energy. However, experience has shown us that infrastructures of dams and reservoirs should be developed with an integral vision, a comprehensive approach. All the feasible alternatives should be considered as part of this holistic approach.

Storage types have to be adapted to their purposes in size (from small to large scale), and type (water harvesting, small dams, large dams, surface and groundwater management, etc.)

Resulting Question 3. How much storage do we need in the future? What type of storage and where?

Experience in the development of dams during the last Century showed that infrastructures of water and energy, dams and reservoirs could, in some cases, have a

major social and environmental impact. Also, lessons from the past show that the contribution of infrastructures to sustainable development requires careful planning and management with respect to environmental and social issues. So it is necessary to consider them within the framework of Integrated Water Resource Management: Water, Energy and sustainable development. If we want to ensure that infrastructures are built for development, it is necessary to share the benefits between all affected people.

It is necessary bridging divides positions, to break down the dilemma and the antagonisms between the structural actions and the management and conservation measures.

Resulting Question 4. How to ensure that the projects and infrastructures are applied for the human growth and the sustainable development?

(Types of) Organizations to be involved in topic consultations.

National Governments and Governmental Organizations: African ministers Council of Water. Ministers of water/agriculture/ environment

International Agencies: UNESCO, UNEP, UNDP, FAO

Multilateral donors: WB, AFDB, ADB.

Professional organizations: WEC, ICID, IHA, IHGA, ICOLD

Environmental agencies: WWF, IUCN.

Associations: IRHA, INBO, IRCS, International Agriculture Association

Related national organisations, NGOs and Local civil society

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 website
 - 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.

