UN/Austria/ESA Symposium on "Water for the World: Space Solutions for Water Management" (Graz, Austria, 13-16 September 2004)

Working Group on the development of a pilot project

SUMMARY OF DISCUSSIONS

1. **Title and objectives**

   Title: "Space technology in support to water resources management for poverty alleviation"

   Objectives:
   - Capacity-building;
   - Protection of environment;
   - Sustainable development

2. **Timeframe**
   - Following the preparatory phase, the following framework is suggested for a pilot project:
     - 3 years: Operation: development and implementation, including monitoring and evaluation as well as sharing of experience;
       - Baseline review
       - Mid-term review
       - Impact assessment review
     - 1 year: Preparation for sustainable operations: (starting already after the mid-term review).

3. **Donor partners**
   - Donor partners could include, but not limited to, the following entities:
     i. Committee on Earth Observations Satellites (CEOS) members and affiliates
     ii. Entities of the United Nations system
     iii. World Bank
     iv. Professional associations and scientific associations, such as ICSU
     v. Regional banks
     vi. Private sector
     vii. ODA
     viii. Other regional commissions (other than those UN economic commissions)
     ix. Water-related organizations

4. **Partnership**
   - Promoting the broad participation of non-governmental organizations, universities and research institutions, such as those with data processing capability, and grass-roots partners is critical;
     - Examples of ISRO project, involving local personnel; grass-roots partners could make commitment by providing in-kind support, i.e. manpower, data collection, etc.
   - For the region of Africa, it is desirable to build upon existing regional partner networks, such as African Network of Basin Organizations (ANBO) and regional commissions such as ECOWAS;
   - Involvement of women organizations is also important, in view of the essential role that women play in development.
   - Donor community
   - Space community

5. **Recipient commitments**
   - Relevant government institutions (cost sharing)
     - National/federal governments
     - Regional/local authorities
   - Intergovernmental organizations
   - Non-governmental organizations,
   - Community-based organizations
   - Academia
   - Consideration of project results to make decisions on possible implementation of the project output.

6. **Institutional development/conditionality (pre-conditions)**
   - There should be a coordinated mechanism to ensure the collection of, access to and distribution at all levels (local to national, etc.) of appropriate information, building upon existing partner networks.
     - TIGER Initiative could provide an important framework for such coordination mechanism at least for its initial phase due to its openness and flexibility in information sharing.
   - "Transparency" is a key; "space-derived" information provides such "transparency" (no administrative boundary from space)
   - A possible approach could be to have an institution to manage information required at international level;
     - River basin authorities could be a model for such institution.
     - Efforts should be made to aim at confidence-building through shared information management.
   - The information to be managed should encompass policy, social and technical aspects; at the initial point,
     - Information to be shared internationally should be of general nature.

- There is a need to determine the recipients of information.
- Recommendations on policy issues related to space technology utilization should be part of the project output.

7. Infrastructures, technical facilities, equipment

- Validation and calibration of space-based data is essential.
- *In-situ* measurement network is fundamental.
- Use of existing ground facilities and receiving stations and their upgrading should be optimized.
- There is a need to consider the entire processing chain.
- Acquisition of hardware/software & equipment and their maintenance has to be considered.
- Considerations should be given to a proper trade-off between built-in, customized processing systems and commercially available systems having in mind the goal of sustainable operations (maintenance cost for commercial system should be taken into account).
- Maintenance of equipment is a critical issue; development of local capability in this context should be emphasized.
- Local environmental conditions should be considered by manufacturers.

8. Functional scope

- The minimum level of technical functionality (processing, measurement and evaluation) among all participants of the projects (e.g. all participating basins) should be guaranteed.
- The project should be implemented at basin level.
- Different information levels for decision makers should be addressed.
- Pursuance of "bottom-up" approach, ensuring the participation of all stakeholders at local level.

9. Capacity-building

- Capacity-building is essential to ensure the sustainability and autonomy.
- It is necessary to conduct a survey on what kind of education, training and capacity-building is required for which type of audience (e.g. decision-makers, programme managers, technicians, local communities (e.g. farmers associations), women and young generations, etc.).
- Some areas of capacity-building include:
  - equipment management and maintenance;
  - data collection and analysis;
  - infrastructure management;
  - increasing awareness of decision-makers.
- Training for trainers is important.
- Institutional capacity-building is important (versus individual capacity-building).

- There is a need for capacity-building of river basin authorities on modeling and remote sensing.
- Promotion and strengthening of partner network is important.

10. Resources

- Proper budgeting is a key for the success of the project and should cover all elements such as cost of procurement of space data and equipment, training and capacity building cost.
- Contributions from donor organizations, such as development agencies, regional commissions, regional banks, and private sector, are essential.
- Counterpart contribution and commitment are pillars for sustainability.

11. Criteria for study area selection

- Transboundary basins should be given priority.
- Basin authority should exist.
- Well-documented needs assessment should be available.
- *In-situ* measurement network should exist.
- Capacity in space technologies should exist.
- Non-governmental organizations should exist.
- Socio-economic impact should be considered.
- Existing related initiatives should be considered.

12. Sharing the experience and outreach (increasing awareness of the general public)

- Each project should aim at increasing awareness of the general public and policy-makers on importance of water resources management and usefulness of space-derived data and information for decision-making including by stimulating the awareness of the media and the press.

THE WAY AHEAD: MILESTONES

Target	**Action**
[End October 2004]	OOSA to revise the document and distribute to WG members
[Beginning November 2004]	WG members to review and provide comments on the revised document [within 1 week]
[Mid November 2004]	OOSA to revise the document and distribute to the Symposium participants
[Beginning December 2004]	Symposium participants to review and provide comments on the revised document [within 3 weeks]
[December 2004]	OOSA to finalize the document [and distribute the finalized documents to XXX]
[December 2004]	OOSA to set up a small on-line "Graz Proposal Committee"
[December 2004]	OOSA/Graz Proposal Committee to prepare a letter to potential donors, to solicit interest for this project exercise and call for an initial statement of intention to support it.
[December 2004]	OOSA/Graz Proposal Committee to prepare a letter to space agencies to solicit interest for this project exercise and call for an initial statement support it
[End December 2004]	OOSA to send the letters, accompanied by the project document, to potential donors and to space agencies.
[January-February 2005]	OOSA/Graz Committee to contact potential donors and space agencies to check their intention
[March 2005]	OOSA to issue a "Call for Proposals" to XXX, asking for a Letter of Intent by end May 2005
April 2005	OOSA to enlarge the "Graz Proposal Committee" as an Advisory Group to those entities that wish to respond to the Call
May 2005	OOSA to set up a "Graz Proposal Evaluation Committee"
June 2005	OOSA to report to the UN Committee on the Peaceful Uses of Outer Space (COPUOS) on the "Graz exercise" and on the status of the "Call for Proposals"
September 2005	Graz Evaluation Committee to start evaluation work

Target	**Action**
Mid-October 2005	"Graz Evaluation Committee" to report to OOSA on the evaluation results