

**WORLD METEOROLOGICAL ORGANIZATION**



**WHYCOS  
INTERNATIONAL ADVISORY GROUP**

**Fifth meeting**

**Geneva, Switzerland  
20 – 22 January 2003**

**FINAL REPORT**



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## ACRONYMS

AGRHYMET	Regional Training centre for Agrometeorology and Operational Hydrology and their Applications
ARGOS	Data Relay and Platform Location System
AWG	Advisory Working Group
BALWOIS	Water Observation and Information System for the Balkan countries
Cg	Congress of WMO
CHy	Commission for Hydrology
DCP	Data Collecting Platform
DWAF	Department of Water Affairs and Forestry
EC	Executive Council of WMO
EIER	Ecole Inter-états de l'Équipement Rural
FAO	Food and Agriculture Organization of the United Nations
FAO NBWR	FAO Nile Basin Water Resources
FFEM	French component of GEF
GEF	Global Environment Fund
GHENIS	Gestion Hydro-écologique du Niger Supérieur
GMS	Geostationary Meteorological Satellite
GTS	Global Telecommunication System
HYCOS	Hydrological Cycle Observing System
HYDRONIGER	Hydrological Forecasting System for the River Niger Basin (NBA)
ICIMOD	International Centre for Integrated Mountain Development
IRD	Institut de Recherche et de Développement
LCBC	Lake Chad Basin Commission
MEDWOIS	Mediterranean Water Information System
MOU	Memorandum of Understanding
MRC	Mekong River Commission
NBA	Niger Basin Authority
NBI	Nile Basin Initiative
OMVS	Organisation de Mise en Valeur du Fleuve Sénégal
RC	Regional Centre
SADC	Southern African Development Community
TA	Technical Assistance
USAID	United States Agency for International Development
WIAG	WHYCOS International Advisory Group
WCG	WHYCOS Coordination Group
WHO	World Health Organization
WHYCOS	World Hydrological Cycle Observing System
WOISYDES	Water Observation and Information System for Decision Support
WMO	World Meteorological Organization
WRTC	Water Resource Technical Committee
SADC WSCU	SADC Water Sector Coordinating Unit



## **1. OPENING OF THE MEETING**

1.1 The WHYCOS International Advisory Group (WIAG) held its fifth meeting from 20 January to 22 January 2003 at the WMO Headquarters in Geneva. The participants are listed in **Annex 1**.

1.2 Mr D. Rutashobya, President of CHy, Chairman, opened the meeting. As a matter of clarification for the participants attending the meeting for the first time, he recalled the general terms of reference of WIAG, which include a review of the Programme and its different components in order, to develop strategies, obtain funds and improve the Programme's visibility.

1.3 The Assistant Secretary-General of WMO, Mr Hong Yan welcomed the participants on behalf of the Secretary-General. He informed the meeting that the last Executive Council (EC), noting the progress in the development and implementation of the WHYCOS programme, had encouraged the WMO Secretariat to further pursue the planning and implementation of HYCOS projects. He recommended that efforts should be increased to secure extrabudgetary sources of funding for these projects. He added that EC had noted that WIAG "continued to serve as a very valuable vehicle for reviewing programme activities and developing future plans".

1.4 He informed the meeting that the Congress of WMO (Cg-XIV) would take place in May 2003 and that it will consider among other subjects, the new developments within WHYCOS and the level of support that WMO should provide them in the next four years. He advised the meeting to use the opportunity for providing valuable guidance towards the development of the programme.

1.5 Mr C. Caponi, Acting Director of the Hydrology and Water Resources Department, also extended his welcome to the participants.

## **2. APPROVAL OF THE AGENDA AND ORGANIZATION OF THE WORK**

2.1 The meeting adopted its agenda, as given in **Annex 2** and agreed on the organization of the work.

## **3. CONSIDERATION OF THE REPORT OF THE FOURTH WIAG MEETING (MAY-JUNE 2001)**

3.1 The Group considered the report of its last meeting held in May-June 2001, and in particular went through the recommendations made at that time. As all the recommended actions were either directly related to identified HYCOS projects which were expected to be discussed later on during the meeting (agenda items 5, 6, 7, 8) or with general policy issues related to the WHYCOS programme (agenda item 10), the group decided to address these issues when considering the respective agenda items.

## **4. REPORT ON THE FIFTH MEETING OF THE WHYCOS COORDINATION GROUP (WCG) (JUNE 2002)**

4.1 The Secretariat informed the meeting about the principal outcomes of the last meeting of the WCG, held in June 2002. WIAG noted that some donor agencies preferred to fund HYCOS projects through direct agreement with regional counterparts and that WMO's role was not always clear in the implementation of these projects. It therefore agreed with



electronic data exchange and electronic system was below expectations. There is also concern about the quality of the data, as for example out of 44 stations monitored by the project, only 13 discharge tables have been made available to the RC.

5.1.6 The major cause of insufficiency of the project relates to the preparation and use of "hydrological products of national and regional interest", which was not implemented by the Technical Assistance (TA) to the Project.

5.1.7 Maintaining the network of DCPs is also a matter of concern. Due to vandalism and highly variable flow regimes, the equipment has suffered substantial degradation. For example, out of the 45 DCPs installed only 33 are currently transmitting data and only 15 DCPs are transmitting water levels.

5.1.8 Among lessons learnt for the future, is to review the general practice of satellite data transmission (where vandalism may be a problem and alternatives are available) and to utilise low power consumption instruments whenever possible. In general, appropriate technology should be used to meet the specific local conditions and the stations have to be designed to inhibit vandalism and theft.

5.1.9 It is also clear that the regional database and Internet server have to be in place from the very beginning of the project, that relevant attention must be given to data validation and that hydrological information products have to be developed to turn data into usable and attractive information. Training should be given in accordance with requirements.

5.1.10 To ensure that these requirements are met, a preparatory phase with an accurate project implementation design is compulsory. It was also pointed out that successful international cooperation at the basin level requires political support.

*Action proposed: The above remarks should be considered during the preparation of future projects (WMO Secretariat)*

## **6. DEVELOPMENT OF FUTURE HYCOS PROJECTS OR PHASES DURING 2003 (OUTSIDE OF WESTERN AND CENTRAL AFRICA)**

### **6.1 SADC-HYCOS Phase II**

6.1.1 The Secretariat informed the meeting of the developments which occurred in 2002 regarding the development of Phase II of SADC-HYCOS. Two documents have been prepared by the WMO Secretariat for the SADC Water Sector Co-ordinating Unit (WSCU): a "Framework Document", which is a general framework for developing water resource information systems in the SADC region, including future phases or components of SADC-HYCOS, and an "Implementation Document for Phase II", which describes in detail the institutional, financial and technical aspects of phase II. At the request of WSCU, the document has been revised several times during 2002, before being presented at the meeting of the Water Resources Technical Committee of SADC (WRTC) held in Mauritius in June 2002. Since then, WMO has not been informed of any further developments by WSCU. It was confirmed during the meeting that discussions are underway between the potential donors and WSCU.

6.1.2 The meeting urged WMO to restart the dialogue with WSCU, and to liaise with other stakeholders of the project (the National Hydrological Services, the Regional Centre and the donors) in order to facilitate a quick and smooth implementation of Phase II of SADC-HYCOS.

*Action proposed: Co-ordination with WSCU to start the process of implementation (WMO Secretariat)*

## **6.2 IGAD-HYCOS**

6.2.1 The Secretariat and the representative of IGAD Mr M. Karaba briefed the meeting on the progress of the preparation of the detailed project document. The meeting was pleased to learn that Mr van Biljon, due to his broad experience in the WHYCOS programme, has been selected as the consultant for the preparation of the necessary documents for implementing the project as requested by the EC. Mr van Biljon informed the meeting of his plans to carry out the task. The meeting requested WMO to provide the necessary support to the consultant and to IGAD Secretariat to ensure smooth implementation of the preparatory phase.

*Action proposed: Finalization of IGAD project document (WMO/IGAD Secretariat)*

## **6.3 MED-HYCOS**

6.3.1 Mr M. Morell, coordinator of the Pilot Regional Centre, presented the current status of the MED-HYCOS activities (<http://medhycos.com>). He recalled the creation of a regional data bank of historical and near real time data, as well as the development of a number of tools for accessing and visualizing such data via Internet. Concerning the observing network established within the project framework, he reported with concern on the decreasing number of operational stations, mostly due to technical failures, mainly of data loggers and transmitters.

6.3.2 He also informed the meeting about two new projects addressing the Balkan countries that are funded by the European Commission in 2003 and 2004. The first project, WOISYDES (Water Observation and Information System for Decision Support) (<http://woisydes.net>), will collect and combine various data and information on climate, water cycle, natural environment, extreme events, water resources and water uses, in order to disseminate suitable and reliable products to end-users. Special attention will be devoted to the identification of information users and their needs. In the framework of the project, some ARGOS DCPs equipped only with water level sensors ([http://www.serpe-iesm.com/serpe-iesm/Hydro\\_New/Gb/frame\\_hydro\\_Newgb.htm](http://www.serpe-iesm.com/serpe-iesm/Hydro_New/Gb/frame_hydro_Newgb.htm)), are to be installed. In the framework of the second project, BALWOIS, a scientific conference will be organized to address the impacts of global climate and environmental changes and water management practices on the water cycle and balance in the Balkan catchments, as well as to promote a water observation and information system in the region. As a follow up to the MED-HYCOS, a proposal to be submitted to the European Commission for the development of a Mediterranean Water Observation and Information System (<http://medwois.net>).

*Action proposed: Support the development of MEDWOIS proposal (WMO/IRD)*

## **6.4 Baltic-HYCOS**

6.4.1 The representative of the Baltic-HYCOS countries, Ms G. Wennerberg informed the meeting about recent developments in the formulation of the project. Representatives of the participating countries gathered at SMHI headquarters (Sweden) in December 2002 to discuss the finalization of the proposal, in particular the allocation of responsibilities concerning the implementation of the various project activities (work packages). The application is to be finalized and submitted by 8 April 2003 to the European Commission in response to the first call for proposals under the sixth Framework Programme. Ms Wennerberg presented the difficulties encountered in adapting the regional Governance of the project, in particular the role of WMO, into the donor's specific project format which requires a national institution to play the role of principal contractor with European Commission.

*Action proposed: Support Ms Wennerberg to finalize the application document (WMO/SMHI)*

## **6.5 Carib-HYCOS**

6.5.1 The Secretariat informed the meeting that since the last WIAG meeting a mission was undertaken to the region (March 2002) jointly by the WMO Secretariat and Mr B. Thébé, representative of IRD. Barbados, Martinique, Guadeloupe, French Guyana, Haiti, Trinidad and Tobago were visited. The concept of the project has gained strong interest and support, especially in Martinique, where a general meeting of stakeholders was called by the Inter-Regional Director of Météo-France. Among others, the Conseil Général, the Conseil Régional, and the Comité de Bassin were represented. There was a clear commitment from some of these institutions to participate in the project, by providing financial support to its development, and to further its the implementation. In close cooperation with these bodies and Météo-France, IRD is pursuing contacts for obtaining funds for the project.

*Action proposed: Securing funds for implementing CARIB-HYCOS (IRD)*

## **6.6 HKH-HYCOS**

6.6.1 The Secretariat reported on the status of the project, whose main aim will be flood forecasting at the regional level. The project principles have been endorsed by the participating countries (Bangladesh, Bhutan, China, India, Nepal and Pakistan) in May 2001 and a draft project proposal has been developed by ICIMOD and WMO. The proposal will be considered during the second high level consultative meeting to be held in Katmandu in March 2003, which should lead to the signature of a working agreement between the participating countries. USAID has expressed interest in funding a pilot phase of the project, which among other things will test the specific data collection techniques to be used in this HYCOS component (field data collection through GMS and data distribution to users through a hybrid system using the WMO GTS and Internet as required).

*Action proposed: Follow up the development of HKH-HYCOS (WMO Secretariat)*

## **6.7 Mekong-HYCOS**

6.7.1 WIAG was pleased to learn that a Memorandum of Understanding was signed between WMO and Mekong River Commission (MRC) on 11 December 2001 institutionalizing cooperative activities and in particular the development of a MEKONG-HYCOS project, with the objective of enhancing flood forecasting and information in the Mekong Basin. A project concept document has been prepared by WMO in 2002 and sent to MRC for comments. It is expected that the final version of the concept document will be circulated to member countries of MRC (Cambodia, Lao, Thailand, Vietnam) in early 2003. The constituent bodies of the MRC should subsequently endorse the concept document. This will then lead to the development of a full project proposal to be later on submitted for funding. MRC will be the implementing agency and WMO will be the executing agency.

*Action proposed: Development of project proposal (WMO Secretariat)*

## **6.8 Amazon-HYCOS**

6.8.1 The Secretariat informed WIAG that the planned meeting between the participating countries, which was to be held in Santa Cruz de la Sierra (Bolivia) to discuss the draft project proposal prepared by a CHy Expert, Mr V. Guimarães (Brazil), had to be postponed due to financial constraints. Funds are presently being sought to support the meeting. The project proposes incorporation of Brazil's existing large network of over 150 DCP stations into a project covering the whole Amazon Basin (Brazil, Peru, Colombia, Bolivia, Ecuador, Venezuela and Guyana).

## **6.9 La Plata-HYCOS**

6.9.1 The meeting noted that the existing large network of DCPs and the organizational structure (Intergovernmental Co-ordinating Committee - CIC of the countries of the La Plata Basin representing Argentina, Bolivia, Brazil, Paraguay and Uruguay) are favourable for the development of La Plata-HYCOS. Furthermore, in December 2000, CIC and WMO signed a Memorandum of Understanding to co-operate in the field of hydrology and water resources. Upon request from CIC, the Secretary-General of WMO has offered to co-ordinate the development of an action plan to address, among other topics, La-Plata HYCOS. However due to the lack of resources, development of the proposal is lagging behind.

*Action proposed: Secure funds for developing proposals for  
AMAZON / LA PLATA HYCOS (WMO Secretariat)*

## **7. REVIEW OF PHASES OF HYCOS PROJECTS TO BE COMPLETED IN 2002 AND CONSIDERATION OF FUTURE ACTIONS**

### **7.1 Pilot Phase of AOC-HYCOS**

7.1.1 The coordinator of the Pilot Phase of AOC-HYCOS, Mr O. Ould Aly presented the project's achievements since the last meeting of the WIAG. He recalled the project's objectives and a list of 103 stations to be included in the regional data base, as agreed upon by the participating countries.

7.1.2 WIAG was pleased to note that among the most important institutional achievements were the assessment of the Pilot Phase by WMO in September 2001, the technical assistance missions of IRD during 2001, the training of the data base manager in Montpellier (February 2002), the organisation of the 15<sup>th</sup> HYDRONIGER Technical Committee meeting (Niamey, May 2002), the preparation of two project documents in the framework of AOC-HYCOS (namely Niger-HYCOS and Volta-HYCOS) and the outcome of the 21<sup>st</sup> NBA Council of Ministers (December 2002).

7.1.3 It also noted that in the domain of technical achievements is the updated regional data base, the maintenance of the Internet server, the update of the server tools and information (hydrographs, rainfall information, technical notes, runoff yield of sub-catchments, presented on maps, etc.) , the launching of a programme of installing new DCPs and the establishment of a technology dissemination site. The project has supplied identified users with data and information, especially research institutions and academics.

7.1.4 WIAG also noted that the project has experienced several constraints amongst which are the poor visibility of the server due to poor internet infrastructure in Niamey; the delay in the implementation of some activities as a consequence of the hold back of the second part of the funding by the donors until November 2002 and the degraded performance of the different DCP networks used by the project (HYDRONIGER, WHO, GHENIS Project and Lake Chad Network).

7.1.5 Mr Ould Aly informed WIAG that conditions should improve substantially during the coming months: installation of a dedicated internet line (64 Kb), strengthening of co-operation with AGRHYMET, enhanced capacity of the Regional Centre in Internet related technologies, strong political support expressed by the Council of Ministers of the NBA countries to Niger-HYCOS, secondment of a French expert to provide technical assistance to the Consortium AGHRYMET - NBA - ACMAD.

7.1.6 The meeting congratulated the Regional Centre for these results. It was agreed that WMO will make available very soon the second part of the funding to the countries which have fulfilled satisfactorily their commitments in terms of data exchange with the regional Centre and have provided a financial statement of the use of the first payment. The meeting has also requested NBA to pursue contacts with the other countries for obtaining hydrological data as agreed upon at the launch of the project.

*Action proposed: Transfer funds to the countries* (WMO Secretariat)

## **8. DEVELOPMENT OF THE TRANSBOUNDARY RIVERS BASINS PROJECTS DURING 2003 (IN WESTERN AND CENTRAL AFRICA)**

### **8.1 Niger-HYCOS**

8.1.1 The representative of NBA, Mr Ould Aly and the WMO Secretariat informed WIAG of the joint efforts to develop a comprehensive project document for NIGER-HYCOS. The Draft has been considered by the technical Committee of HYDRONIGER, the relevant hydrological authorities of the NBA countries and the NBA Secretary. The final version has been made available by the end of 2002. The proposal will now have to be submitted to the donors, the EC being the likely supporter of the initiative. The development of Niger-HYCOS shall be considered as an achievement of the Pilot Phase of AOC-HYCOS and was partly funded by this project.

*Action proposed: Follow up the implementation of NIGER-HYCOS*  
(WMO's Secretariat and NBA)

### **8.2 Volta-HYCOS**

8.2.1 The representatives of Ghana, Burkina Faso and the WMO Secretariat reported to the meeting on the progress of this initiative, which has been carried out and partially funded by the Pilot Phase of AOC-HYCOS. The Volta basin is shared among 6 countries (Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, Togo), Burkina Faso and Ghana alone share about 85% of the Basin area. The first draft, prepared by a consultant of IRD has been made available in October 2002. During the last two months of 2002, the report was considered by a bilateral task force of Ghana and Burkina Faso and a number of amendments, mostly related to the institutional and coordination aspects of the project, have been included. This revised draft shall now be presented and discussed with all other Member countries of the Volta Basin. The Project is expected to be funded at a level of € 1,2 million by FFEM (the French component of GEF). As there is no existing river basin organisation, the Regional Centre might be hosted by a regional educational body (EIER) located in Ouagadougou, with technical back-up of IRD. Volta-HYCOS is seen as an initial technical step in the setting up of a transboundary river basin organisation for the Volta. At the request of the donor, WMO is expected to be the implementing agency of the project. The representatives of Burkina Faso and Ghana have expressed their consensus on the current project design and their readiness for further discussions and actions for launching, as soon as possible, a project which will allow the countries to develop a shared vision for water management in the basin, based on reliable and shared information.

*Action proposed: Follow up the implementation of Volta-HYCOS*  
(WMO's Secretariat, FFEM,  
IRD and participating countries)

### **8.3 Lake Chad-HYCOS**

8.3.1 The representative of the Lake Chad Basin Commission (LCBC), Mr L. Tam informed the meeting on the status and mandate of LCBC, an intergovernmental body whose members include Cameroon, Niger, Nigeria, Chad, Central African Republic and Sudan as an observer. The mandate of the Commission covers all aspects of development in the area, not necessarily restricted to water-related issues. He informed the meeting of the implementation of a GEF project addressing all environmental aspects in the Lake Chad basin, including water and land degradation, with the objective of restoring environmental conditions of the Lake. The project includes the provision of hydrological monitoring equipment and the training of technicians from the Member States. The Arab Bank for Development in Africa has already committed itself to finance this phase of the project at a cost of US\$ 250 000.

8.3.2 WIAG was pleased to know that since 1999 a Memorandum of Understanding exists between LCBC and WMO. It feels that a HYCOS project would be an adequate framework for developing this cooperation in the field of data collection and data exchange at the basin level. A request has been sent by LCBC to France in 2002 for financial support of the development phase of the project. The attempt has not yet been successful. LCBC has formally requested the technical and institutional support of WMO for developing in the near future a Lake Chad-HYCOS proposal, in the new framework of AOC-HYCOS (transboundary river basin components).

*Action proposed: Development of LCBC-HYCOS proposal (LCBC/WMO's Secretariat)*

### **8.4 Senegal River Basin Development Organization (OMVS)**

8.4.1 A presentation of the "Organisation de Mise en Valeur du Fleuve Sénégal" (OMVS) was made by H.E. Mr M. Ould Merzoug, the High Commissioner of OMVS. After having presented the institutional framework and the history of the Institution, the meeting was briefed on its achievements in the domains of data collection, data base operation and use of water management tools, particularly those used for the operation of the Manantali and Diama dams.

8.4.2 It was noted that the current knowledge of the river basin, as far as hydrology is concerned, was satisfactory in the downstream part of the river basin (the valley downstream of Bakel), but there is still a need for enhancing operational hydrology and data exchange in the upper parts of the basin; especially in the region of the Fouta Djallon in Guinea. In this respect, OMVS thinks that there is an opportunity for setting up a WHYCOS programme involving all countries of the river basin, with a special emphasis on the upstream part. OMVS has requested the experience and expertise of WMO for the joint preparation of an SENEGAL-HYCOS project as soon as possible.

8.4.3 H.E. Mr Ould Merzoug also informed the meeting of the launching of the "Network of the African River Basin Organizations"(Dakar, June 2002), OMVS was selected for hosting the Permanent Secretary of the network in its headquarters at Dakar. Consequently, OMVS might also be able to play as a catalyst in the coordination and harmonization of the different river basin HYCOS implemented not only in West and Central Africa, but eventually all over the continent.

*Action proposed: Preparing MOU between WMO and OMVS (WMO/OMVS)*

## 9. THE DEVELOPMENT OF LONGER TERM HYCOS PROJECTS (BEYOND 2003)

9.1 With respect to Danube-HYCOS, the Secretariat informed the meeting that the development of the project had not progressed significantly since the last meeting of WIAG. However it was expected that the interest for this component could be revised after the summer 2002 floods in Central Europe. The proposal for Danube-HYCOS was presented at the technical meeting preceding the ministerial summit in Budapest in December 2002 for representatives of the Central European countries affected by floods.

9.2 The Secretariat informed the meeting about the request received from the Nile Basin States in 1996 to assist them in the preparation of a portfolio of co-operative projects, which aim at building trust and capacity for socio-economic development. Project Profile for Nile-HYCOS proposal was prepared and endorsed by the Council of Ministers of Water Affairs of the Nile Basin States (Nile-COM). The WIAG was informed that the Nile Basin Initiative (NBI) is considering the project among others in their planned activities. WIAG was pleased to learn that WMO have been participating in all the Nile 2002 Conferences to promote the Nile-HYCOS proposal.

9.3 FAO Representative to the Meeting Mr M. Andjelic, briefed WIAG on FAO's long term Nile Programme in the field of Hydrology and Water Resources that has been implemented in the various parts of the Nile Basin since 1991. In this context, he presented in more details on the objectives, outputs and major achievements of the FAO Nile Basin Water Resources (NBWR) project, which is currently being implemented in the basin with participation of all the Nile Basin countries and financial support from Italy. The project's main outputs are concerned with:

- Establishment of a limited transboundary water resources monitoring network;
- Development of a geo-referenced water resources database;
- Development of a prototype decision support system for a shared vision of water resources management in the Nile Basin;
- Capacity building in all the above fields through use of "learning by doing" principle as well as intensive training in international water law, institutional arrangements for cooperation in the international river basins, negotiation skills and conflict resolution techniques.

9.4 The FAO NBWR project has played an important role in supporting formulation of and launching the Nile Basin Initiative (NBI); further WIAG was informed that, as the NBWR project is coming to an end in 6-months time, dialogue is currently underway with the Nile riparians and NBI governing bodies (Nile-COM, Nile-TAC and NBI Secretariat) on how to (a) integrate the project into the NBI's basin-wide Shared Vision Programme and fully utilize its achievements; and (b) formulate and secure implementation of a follow up project phase.

9.5 Mr Andjelic pointed out that some of the project's outputs, e.g. water resources monitoring network, have a lot in common with WHYCOS of WMO, and that possibilities exist for future WMO involvement in the Nile Basin.

9.6 WIAG noted with appreciation the presentation of the FAO Nile Programme in Hydrology and Water Resources; it recommended that avenues for possible cooperation between FAO and WMO be explored in the forthcoming period with a view of formulating Nile-HYCOS and participating in its implementation, possibly as a component of a larger follow up Nile Basin Water Resources project that will be fully integrated with the NBI Shared Vision Programme.

*Action proposed: Explore opportunities for Promoting Nile-HYCOS and Danube-HYCOS  
(WMO/FAO)*

## **10. GENERAL POLICY ISSUES OF THE WHYCOS PROGRAMME**

10.1 As requested by the AWG of CHy, the meeting considered the issues of "Guidelines and Standards for WHYCOS". The Secretariat informed the meeting that a first draft has been prepared by a consultant since the last meeting. However, the issue of the target audience of this document remains unclear and WIAG was requested to elaborate and clarify on this matter. The meeting felt that the document should be usable by all stakeholders normally involved in a HYCOS project (WMO, the NHSS of the participating countries, the institution hosting the Regional Centre, the donors and funding agencies, the regional organizations and in particular the transboundary river basin authorities, etc.).

10.2 The meeting recommended that the guidelines should provide guidance and advice for addressing problems potentially faced in the implementation of a component, based on the experience gained from previous projects. It further recommended the title be "Guidelines for the development and implementation of HYCOS Projects". It was felt by some participants that the document should be kept as concise as possible.

10.3 Following discussions whilst considering lessons learnt from the on-going and past projects, the meeting identified the following issues, which should among others, be dealt with in the guidelines:

- a) Data exchange and dissemination (from the field to the Regional Centre and from the Regional Centre to end-users)
- b) Project governance (technical, financial, managerial and institutional aspects of HYCOS projects)
- c) Field data collection (technological options appropriate to project constraints, data validation procedures)
- d) Relevant geographical framework and size of the project
- e) Role of stakeholders (WMO, countries, donors, regional center, regional institutions, others)
- f) Capacity building
- g) Ownership and sustainability
- h) Relation of HYCOS projects with other projects
- i) Integration on global level with other HYCOS components (WHYCOS)

10.4 The WIAG requested the Secretariat to pursue the development of such guidelines, in the way it deemed most appropriate, and to submit to WIAG members a first draft by July 2003.

*Action proposed: Preparing draft Guidelines*

*(WMO Secretariat)*

## **11. FUTURE MEETINGS OF WIAG**

11.1 WIAG requested the WMO Secretariat to ensure the organization of the next meeting towards the end of 2003, in order to consider the draft guidelines, and within the framework of preparation for CHy-XII, assess the achievements and problems in the fields of capacity building, data exchange and dissemination.

*Action proposed: Organization of the Sixth WIAG meeting towards the end of 2003*

*(WMO Secretariat)*

## **12. ANY OTHER BUSINESS**

12.1 The meeting was informed of WMO's plans regarding its participation in the Third World Water Forum, to be held in Japan in March 2003. WMO will coordinate three sessions: (i) floods; (ii) data exchange and information; and (iii) climate change and water, during the "Africa Day".

*Action proposed: Promoting WMO's activities with focus at its policy on exchanging Hydrological data and products at the 3<sup>rd</sup> WWF in Kyoto (WMO Secretariat)*

## **13. APPROVAL OF THE REPORT OF THE MEETING**

13.1 The meeting adopted the report of the session and requested the WMO Secretariat to finalize the text, making the necessary editorial amendments , and to distribute copies of the draft to all participants.

## **14. CLOSURE**

14.1 At the close of the meeting Mr Rutashobya, the chairman, thanked the participants for their active and valuable contribution to the discussions. He spoke of confidence in the future of WHYCOS and its individual HYCOS components.

14.2 On behalf of the participants Mr K. Hofius, expressed appreciation to the Chairman for his excellent work during the meeting. He also thanked the WMO Secretariat for its support, not only to the meeting, but also to the continued development of WHYCOS.

14.3 The meeting closed at 12h35 on Wednesday 22 January 2003.



## LIST OF PARTICIPANTS

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**AGENDA**

1. OPENING OF THE MEETING
2. APPROVAL OF THE AGENDA AND ORGANIZATION OF THE WORK
3. CONSIDERATION OF THE REPORT OF THE FOURTH MEETING (JUNE 2001) OF THE WIAG
4. REPORT ON THE FIFTH MEETING (JUNE 2002) OF THE WHYCOS COORDINATION GROUP (WCG)
5. REVIEW OF COMPLETED PHASES OF HYCOS PROJECTS
  - SADC-HYCOS PHASE I
6. DEVELOPMENT OF FUTURE HYCOS PROJECTS OR PHASES DURING 2003 (OUTSIDE OF WESTERN AND CENTRAL AFRICA)
  - SADC-HYCOS PHASE II
  - IGAD-HYCOS
  - MED-HYCOS
  - BALTIC-HYCOS
  - CARIB-HYCOS
  - HKH-HYCOS
  - MEKONG-HYCOS
  - AMAZON-HYCOS
  - LA PLATA-HYCOS
7. REVIEW OF PHASES OF HYCOS PROJECTS TO BE COMPLETED IN 2002 AND CONSIDERATION OF FUTURE ACTIONS
  - PILOT PHASE OF AOC-HYCOS
8. DEVELOPMENT OF THE TRANSBOUNDARY RIVERS BASINS PROJECTS DURING 2003 (IN WESTERN AND CENTRAL AFRICA)
  - NIGER-HYCOS
  - VOLTA-HYCOS
  - LAKE CHAD HYCOS
  - SENEGAL RIVER BASIN DEVELOPMENT ORGANIZATION (OMVS)
9. THE DEVELOPMENT OF HYCOS PROJECTS ON A LONGER TERM (BEYOND 2003)
10. GENERAL POLICY ISSUES OF THE WHYCOS PROGRAMME
11. FUTURE MEETINGS OF WIAG
12. ANY OTHER BUSINESS
13. APPROVAL OF THE REPORT OF THE MEETING
14. CLOSURE