WHYCOS INTERNATIONAL ADVISORY GROUP (WIAG)
First meeting, Geneva, 15-17 June 1998

1. Opening of the meeting (Agenda Item 1)

1.1 The WHYCOS International Advisory Group (WIAG) held its first meeting from 15 to 17 June 1998 in the WMO Secretariat in Geneva. The participants are listed in ***Annex 1*** to this report.

1.2 Prof. K. Hofius, president of the CHy, chaired the meeting, in accordance with the WHYCOS external co-ordination mechanism approved by the Secretary-General of WMO. In his opening remarks Prof. Hofius briefly recalled the origin and purpose of the WHYCOS programme and stressed the value of a co-ordination mechanism, both internally within the WMO Secretariat and externally, between WMO and other partners, so as to ensure the effective implementation and management of the programme.

1.3 Mr Dieter Kraemer, Director of the Hydrology and Water Resources Department, welcomed the participants on behalf of the Secretary-General and expressed the appreciation of the Organization to the various partners (donors, pilot regional centres, etc.) for their contribution to the programme. He noted that WHYCOS had already gained a wide recognition as a valuable vehicle for developing a water information system, which will contribute to the assessment and sustainable management of freshwater resources at national, regional and global levels. He also urged the participants to consider this first meeting as a brainstorming session for the review of the WHYCOS objectives, the WIAG Terms of Reference, and to exchange views on the various agenda items.

1.4 The representative of the World Bank, Mr Geoffrey Matthews was unable to attend the meeting but had spent the previous week in the WMO Secretariat preparing inputs for the meeting, which were contained in Working Paper 4 (see paragraph 2.2 below). Similarly, Mr Pierre Icard, the representative of the Ministère Délégué à la Coopération et à la Francophonie was unable to attend but also provided written inputs for the discussion.

2. Approval of the agenda and organization of the work (Agenda Item 2)

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

2.2 The discussions were based on a number of working papers, which had been prepared for the meeting.

3. Current WHYCOS objectives (Agenda Item 3)

3.1 The meeting considered the proposed objectives and noted that in both the coordination mechanism (Working Paper 1) and in the WHYCOS brochure (WMO–No 876) there were some differences due to the evolution of the WHYCOS concept. It was therefore agreed to reformulate the objectives of WHYCOS so as to provide a clearer basis to better assess programme performance and benefits. These objectives are given in ***Annex 3***. The meeting agreed that there was a need to restructure these and that this should be discussed at the next session of the WIAG. The group recognized that benefits would accrue at national, regional and global levels for particular objectives and agreed that this question should also be addressed at the next meeting.

3.2 ***Recommendation by the WIAG:*** *Adoption by WMO of the objectives for WHYCOS listed in* ***Annex 3****, subject to their regular review to cater for changing circumstances.*

4. Terms of reference of the WIAG (Agenda Item 4)

4.1 The meeting considered the proposed terms of reference as given in the WHYCOS coordination mechanism approved by the Secretary-General. It felt that the composition of the group should be included with the terms of reference. It also felt that the membership of this group should be restricted to a small number if it is to be effective in fulfilling its mandate as an advisory body. In this connection it was considered that the Executive Council sessions provide an annual forum for Regional Hydrological Advisers and the President of the CHy to discuss WHYCOS' related issues. It was also recognized that all the various departments concerned in the WMO Secretariat provided inputs through the WHYCOS Coordination Group (WCG) established by the Secretary-General.

4.2 With regards to the Terms of Reference the meeting agreed on a number of changes to the original proposal, the revised version is given in Annex 4

4.3 The WIAG agreed to consider, at its next meeting, the procedural rules to be followed for its work.

4.4 ***Recommendation by the WIAG:*** *Adoption of the revised Terms of Reference and composition of the WIAG as given in* ***Annex 4.***

5. Current status of implementation and development of HYCOSs (Agenda item 5)

5.1 Discussion on this item was preceded by brief presentations on:

- an overview of the current status of implementation of WHYCOS, by the WMO Secretariat;
- the implementation of MED-HYCOS, by Marc Morell; and
- the implementation of SADC-HYCOS, by Stéfan van Biljon.

5.2 In the overview it was noted that in addition to MED-HYCOS and SADC-HYCOS which were currently being implemented, a number of other projects were at various stages of development. These include: AOC-HYCOS (West and Central Africa), Congo-HYCOS (Congo River Basin), IGAD-HYCOS (Eastern Africa), CARIB-HYCOS (Caribbean and Central America), Baltic-HYCOS (Baltic Sea Basin) and the extension of MED-HYCOS to cover the Black Sea basin (Black-Sea-HYCOS). Furthermore, consideration is also being given to projects covering the Nile, Amazon and La Plata basins and the Andes Region.

MED-HYCOS

5.3 The meeting noted that 24 countries and territories are collaborating and participating in the MED-HYCOS project at varying levels of commitment. These include: Morocco, Algeria, Tunisia, Palestinian Authority, Israel, Jordan, Lebanon, Turkey, Georgia, Ukraine, Romania, Bulgaria, Greece, Cyprus, FYR Macedonia, Bosnia, Croatia, Slovenia, Yugoslavia, Albania, Italy, Malta, France, Spain.

5.4 The group was informed that in 1996 and 1997, five sessions were held of the various bodies involved in the project, including: the Initial Co-ordinating Group (ICG) and the regional Task Forces on Data Collection Platforms Network (RTF1); Regional Data Base (RTF2); Support to National Hydrological Services (RTF3); and Information Infrastructure (RTF4). Three of these meetings were held at the PRC in Montpellier and one each in Croatia and Malta. Two training courses on Data Collection Platforms (DCPs) installation and maintenance were organised in France (1996) and in Croatia (1997), with the representatives of 22 countries. Eighteen stations have been delivered to the countries and eight DCPs have been installed in the following seven countries: Bulgaria, Croatia, Cyprus, Malta, Slovenia, Turkey, and Tunisia. The data collected are available via Internet on MED-HYCOS Web Site. Twenty-two additional DCPs will be installed in the following eligible countries: Algeria, Jordan, Lebanon, FYR Macedonia, Morocco, Palestinian Authority and Bosnia; Israel and Syria are subject to their signing the project document.

5.5 MED-HYCOS is currently developing a Water Information System interfaced with the establishment of a Web site. Tools are available to allow free access to examine the data base, to visualise and to extract the hydrological data. In July, 1000 copies of a CD-ROM containing all of the information from the Web site, including the tools, data from 14 countries and a brochure, will be disseminated to the participating countries and organisations. In 1998, a special effort will be made to expand the tool library and to set up teaching materials, including WMO recommended practices for data acquisition and processing. Possibilities for

the decentralisation of certain activities to the National Hydrological Services will be considered and co-operative links will be established with other initiatives in order to enhance the utility and the visibility of the MED-HYCOS project.

SADC-HYCOS

5.6 The meeting noted that 11 countries are collaborating and participating in the SADC-HYCOS project. These include: Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

5.7 The meeting was informed that after a considerable delay in awarding the Technical Assistance contract for the project, a meeting was held in Maseru on 26 and 27 May 1998, heralding the inception of the SADC-HYCOS project. Representatives from WMO, SADC Water Coordinating Unit, Institute of Hydrology (UK), ORSTOM (France), European Commission (as observer in its capacity as donor for the project to be launched in the ten SADC countries except South Africa) and the Pilot Regional Centre (PRC) for the project were present.

5.8 IH in collaboration with ORSTOM was appointed to provide Technical Assistance (TA) to the participating countries. The firm SERPE-IESM (France) was awarded the contract for the supply of equipment for the project.

5.9 Training on the installation and maintenance of the equipment was provided in France to members of the PRC and TA during May 1998. At the same time factory acceptance tests were performed. The equipment is currently in the process of being sent by air to the participating countries.

5.10 Representatives from participating countries met during April 1998 in Pretoria, primarily to decide on the location of 50 DCPs in the region but also to be briefed on all aspects of the project. The supplier of equipment offered 10 enhanced DCPs (measuring water quality and other meteorological variables in addition to water level conductivity and temperature, and rainfall air temperature) and 40 “normal” DCPs in its tender. It was decided to locate one enhanced DCP in each country. Between four and six DCPs were placed in each country after having had very constructive discussions amongst representatives from neighbouring countries. The placement of DCPs, as recommended by the national hydrologists, was ratified by the SADC Water Resources Technical Committee which met in Zambia during the first week in May 1998.

5.11 Based on the South African experience it was decided among WMO, PRC and TA representatives to undertake a pre-installation inspection of all sites in the region to decide on the required civil works to be undertaken prior to installation of the equipment. The current

work programme aims at installing about half of the total number of DCPs during the dry season in the region this year.

5.12 Two ten-day training sessions are scheduled in Pretoria at the end of June and July 1998 on DCP installation and maintenance and database operation, respectively. Installation of equipment and the establishment of electronic links between the PRC and the countries for data dissemination will follow immediately afterwards.

5.13 The existing South African HYCOS network of 60 DCPs, funded by South Africa, will be incorporated into the SADC-HYCOS network, bringing the number of DCPs in the SADC region to a total of 110.

South West Pacific HYCOS

5.14 The group also considered a project profile for a HYCOS project covering the South West Pacific prepared and presented by Dr P. Mosley in response to a request from the RA V. The proposal focused on the hydrological needs of the region and identified alternative scenarios for the development of the project. The concept of a SW Pacific HYCOS was reformulated as a proposal entitled "Knowledge basis for sustainable water management in the developing Island States of the SW Pacific", with the aim of its submission for funding under the Turner foundation.

Factors affecting the implementation of WHYCOS

5.15 Based on the experience of SADC and MED-HYCOS regarding constraints on the projects, the meeting proposed a set of possible actions. These are summarized in ***Annex 5***. The group also identified a range of benefits from the current HYCOS projects and these are summarized in ***Annex 6***.

5.16 Under this item the group also considered a number of factors which impact on the current implementation and development of WHYCOS. The summary of the discussion is provided under the headings as follows.

- *Human, Financial and Institutional constraints*

5.17 The WIAG considered the constraints based on the experience with the MED-HYCOS and SADC-HYCOS projects. It also recognized the limitation of the WMO Secretariat and especially of the Hydrology and Water Resources Department (HWR) in responding to all of the demands for developing the WHYCOS Programme and in particular new HYCOS components. In this connection it noted the suggestion made by both the World Bank and the French Co-operation for the establishment of a separate WHYCOS entity

(Office or Bureau) within the WMO Secretariat and possibly in the HWR Department. The WIAG expressed the view that such an entity could produce several benefits:

(i) clearly demonstrate the commitment of WMO to develop and sustain the Programme;
(ii) greater visibility of WHYCOS;
(iii) promote the involvement of developed countries in WHYCOS, thereby bringing greater credibility to the global aspects of the Programme;
(iv) transparency of Programme management; and
(v) attract expert secondment dedicated solely to the Programme and financial inputs.

5.18 ***Recommendation by the WIAG:*** *Taking account of the views expressed by the major donors in this connection, WMO should consider the establishment of a WHYCOS Office within the HWR Department.*

- *Data exchange / data sharing*

5.19 The meeting was informed that the countries participating in the MED-HYCOS project have accepted to provide data on condition that prior authorization should be obtained from the originator for any use of these data and information on the Web site and CD ROM. It was recognized that the enforcement of this rule might present a problem as no clear legal basis exists at international level. With regard to SADC-HYCOS there is an agreement among the participating countries to share the data among them. Consideration is to be given to the question of extending the access to users outside the SADC region.

5.20 The group recognized that this was an important issue and that further consideration should be given to it taking into account the principle of Cg-XII, Resolution 40 applicable to meteorological data and the parallel resolution currently being developed for hydrological data, as well as the recommendation of CSD 6 on data sharing.

5.21 There was extensive discussion on the benefits and value of data and information, and the implications this has for future funding and cost-recovery mechanisms. In particular the view was noted that international programmes, e.g. for global water resources assessment, cannot expect to receive data and information from individual countries without contributing to the cost of their collection, especially when those countries are in financially difficult circumstances and are unable themselves to sustain long term observations.

5.22 ***Recommendation by the WIAG:*** *Participants in each HYCOS project should establish clear rules on data exchange and data sharing, preferably in the early stages of the project development.*

- *Performance indicators*

5.23 The group recognized that these indicators provide the basis for monitoring the performance of the project. It agreed that these indicators should be linked to the project objectives. It noted that each individual HYCOS project has a set of performance indicators, for example MED-HYCOS had four overall indicators, relating to the installation of DCPs, database development, training activities and product development. With respect to SADC-HYCOS in addition to training and DCP installation, data being transmitted (identification of gaps) and the quality of data were also considered important indicators.

5.24 The group noted that two categories of indicators may be distinguished, namely: internal (related to specific projects) and external, related to the programme as a whole (for example, performance of the various projects, the number of projects being developed, participation of developed countries, number of NHSs participating, number of hits on Web pages, etc.).

5.25 The group decided that, at future meetings of the WIAG, representatives of the HYCOS projects should provide progress reports in terms of their selected performance indicators, and of WHYCOS objectives and WIAG Terms of Reference.

5.26 It was noted that the World Weather Watch technical performance indicators might also provide some useful guidance.

5.27 ***Recommendation by the WIAG:*** *WMO Secretariat should develop a draft set of performance indicators for WHYCOS for discussion at the next WIAG meeting.*

- *Information infrastructure*

5.28 The meeting noted that the current information in the WHYCOS home page on the Internet has serious limitations as a means of promoting regional discussion and dialogue among HYCOS professionals and the user community, and may have contributed to the lack of interest of the political community. It was therefore felt that the creation of an information infrastructure could contribute towards enhancing this situation. The general feeling of the group was that the availability of Information Technology (IT) expertise to both the HYCOS project regional centres and the proposed WHYCOS Office was essential for this purpose and provision should be made for this when developing the project.

5.29 ***Recommendation by the WIAG:*** *As a high priority the WMO Secretariat to review what is currently available in the area of information infrastructure, and develop a clear concept for WHYCOS in this area.*

- *Financing, Sustainability and Global Coverage*

5.30 It was noted that in general HYCOS projects are implemented with external funding provided for a limited period. There was concern about sustainability of these projects when the external funding ends. Although it is foreseen that the maintenance of the systems will be the responsibility of the NHSs, the group recognized that in the long term the sustainability of HYCOS projects would depend on convincing those with the necessary authority and/or resources that their data and other outputs were of sufficient value to justify expending the necessary resources. Different outputs may be of different value at different levels (national, regional and global), and support could be sought from agencies at each level as a function of the extent to which value is attached to the respective outputs. This feedback and possible financing would be encouraged by involving the user community in the planning and design of each HYCOS so that the users would feel a sense of ownership and be prepared to share the costs involved.

5.31 ***Recommendation by the WIAG:*** *This issue be discussed at its next meeting taking into account any relevant developments in the interim.*

6. Broadening the WHYCOS Concept: WHYCOS the "Global Hydrological Information System" (Agenda Item 6)

6.1 The group considered the different proposals made by the World Bank representative to make WHYCOS a more appealing initiative for a broader set of users.

- *Marketing WHYCOS as an information and knowledge dissemination system for social, economic and environmental development as well as a hydrological information system.*

6.2 The group endorsed this proposal agreeing that the purpose of WHYCOS was the establishment of a global observation and information system. It felt that the reformulated objectives for WHYCOS accounted for the broadening of the programme in this manner. In this connection, the group cautioned against duplicating the work of other agencies. Particular mention was made of GEMS-Water and the GWP.

6.3 ***Recommendation by the WIAG:*** This proposal is covered in paragraph 5.29.

- *WHYCOS as the framework for the second global freshwater assessment*

6.4 The group considered that WHYCOS could contribute to future global freshwater resources assessment activities in particular through the regional databases that are being developed and by the strengthening of the NHSs.

6.5 ***Recommendation by the WIAG:*** *WMO Secretariat to develop a draft proposal as to how WHYCOS can contribute to future global freshwater assessments (e.g. the assessment recently requested by CSD-6 for submission to its session in the year 2002), for consideration by WIAG at its next meeting.*

- *WHYCOS as a disseminator of Water Resource Management and Comprehensive River Basin Management Training Programmes*

6.6 The group accepted the suggestion by the World Bank to include the Unique Reference Location (URL) for the Internet-based Water Resource and Comprehensive River Basin Management Training Programme in the WHYCOS Home Page. The group noted that the training programme would be free for anyone who accesses it and that the URL could also be incorporated into all the HYCOS Home Pages.

6.7 ***Recommendation by the WIAG:*** *WMO Secretariat and HYCOS PRCs should include a cross-reference in their relevant Home Pages to the World Bank Internet-based Water Resource and Comprehensive River Basin Management Training Programme URL.*

- *WHYCOS as a partner in the WWC/Dutch "Vision" initiative*

6.8 The group recognized that the "Vision" is an evolving process. It considered that further discussion on this topic would be necessary at a later stage pending further investigation by the Secretariat.

6.9 ***Recommendation by the WIAG:*** *WMO Secretariat to obtain additional information on the "Vision" for more detailed discussion at its next meeting.*

- *WHYCOS as a partner in the EOLSS initiative via the second global freshwater assessment*

6.10 The group felt that it should consider not only the EOLSS (Encyclopedia of Life Support Systems), but also other similar international initiatives. It decided to discuss this issue in greater detail at its next meeting.

6.11 ***Recommendation by the WIAG:*** *The Secretariat should investigate other international initiatives, which could form a partnership with WHYCOS, including, but not limited to, the EOLSS.*

- *Changing the name of WHYCOS to reflect its role as both observing system and information system for water resources and hydrology*

6.12 WHYCIS and WHYCOIS were suggested as alternative acronyms. However, recognizing that WHYCOS was already widely publicized and recognized it was agreed that the name be retained. The group felt that at this stage it was more important to demonstrate some achievements from the first HYCOSs.

6.13 ***Recommendation by the WIAG:*** *The name of WHYCOS to be retained.*

- *Marketing the "new" WHYCOS.*

6.14 This proposal was for the presentation of a paper on WHYCOS prepared jointly by the World Bank and WMO to the water conference to be held in the Netherlands on 27 September 1998. The meeting agreed that this opportunity should be used to market it to the Dutch organisers of the "Vision".

6.15 ***Recommendation by the WIAG:*** *WMO should collaborate with the World Bank in preparing the paper, which should be subject to a prior review by the chairman of WIAG, WMO to seek other opportunities to market WHYCOS.*

7. The private sector - is there a role? (Agenda Item 7)

7.1 The European Commission representative informed the meeting that EC's financing mechanism for technical assistance calls for open competition in the selection procedure. In this regard, there was some concern that one of the HYCOS projects currently being implemented had attracted little interest from the private sector for participating in the project, even though it had been invited to submit tenders. The question was posed as to how this situation could be improved. One possible approach would be to consider this aspect at the early stage of preparation of the projects and to agree on appropriate arrangements with the potential donors. It was also felt that consideration be given for the involvement of the private sector in capacity building activities and that the private sector should not be considered as a deliverer of services but as a purchaser of services and products also.

7.2 ***Recommendation by the WIAG:*** *The involvement of the private sector as both provider and purchaser of services and products should be considered in future HYCOS projects.*

8. Future meetings of WIAG (Agenda Item 8)

8.1 The group felt that the timing of the meeting, which coincided with EC-L, had placed increased pressure on participants and that the two day meeting did not allow adequate time for the discussions. It was proposed that the next meeting should be of a three-day duration.

It was requested that the Secretariat should, before the end of 1998, arrange for formal feedback on WHYCOS developments, including progress on the recommendations from this first WIAG meeting, to be sent to members of WIAG, and use all available means for rapid communication for consultation (e.g. E-mail).

8.2 ***Recommendation of the WIAG:*** *The next meeting to be held early in 1999.*

9. Any other business (Agenda Item 9)

9.1 The chairman announced that the International Conference on Quality Management and Availability of Data for Hydrology and Water Resources Management will be held in Koblenz, Germany from 22-26 March 1999. The Conference will address a number of issues relevant to WHYCOS. It was suggested that representatives of PRCs and WMO should consider attending and making presentations on the WHYCOS programme and the HYCOS projects being implemented.

10. Consideration of the report of the meeting (Agenda Item 10)

10.1 The meeting considered and adopted the report of its first meeting. The meeting requested the WMO Secretariat to make the editorial changes deemed necessary and to circulate the final report to members of the group and agencies concerned as soon as possible.

11. Closure (Agenda Item 11)

11.1 The chairman noted that the group had achieved much in the short time available and expressed his thanks to members for their respective contributions and the WMO Secretariat for making the necessary arrangements. Mr Stéfan van Biljon expressed his gratitude to the WMO Secretariat for their efforts and assistance in advancing the implementation of the SADC-HYCOS project.

11.2 The meeting closed at 10 am on Wednesday,17 June 1998.

ANNEX 1

FIRST MEETING OF THE WHYCOS INTERNATIONAL ADVISORY GROUP (WIAG)
(Geneva, 15 to 17 June 1998)

List of participants

Prof. Dr K. Hofius	(President of CHy) (Chairman)
Mr P. Mosley	(CHy/AWG)
Mr A. Liebaert	(European Commission)
Mr M. Morell	(MED-HYCOS – Pilot Regional Centre)
Mr S. van Biljon	(SADC-HYCOS – Pilot Regional Centre)
Mr M. Sakho	(RHA/RA I)
Mr D. Kraemer	Secretariat
Mr J. Bassier	Secretariat
Mr S. Pieyns	Secretariat
Mr D. Van De Vyvere	Secretariat

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ANNEX 2

WHYCOS INTERNATIONAL ADVISORY GROUP (WIAG)

FIRST MEETING – 15 - 17 June 1998

AGENDA

1. Opening of the meeting
2. Approval of the agenda and organization of the work
3. Current WHYCOS objectives
4. Terms of Reference of the WIAG
5. Current status of implementation and development of HYCOSs
6. Broadening the WHYCOS concept: WHYCOS the “Global Hydrological Information System”
7. The private sector – Is there a role?
8. Future meetings of WIAG
9. Any other business
10. Consideration of the report of the meeting
11. Closure

ANNEX 3

WHYCOS OBJECTIVES

Overall Goal:

- To work towards a global water observation and information system;

Objectives:

- To strengthen the technical and institutional capabilities of national Hydrological and Hydrometeorological Services through training and capacity building;
- To develop and enhance information systems for providing reliable water-related data, information and products to meet users' needs (for example, flood forecasting and warning, drought forecasting and water resources management);
- To establish a global network of key national observing stations for providing consistent, high-quality data on water quantity, water quality and weather, transmitted in real-time to national and regional data centres;
- To promote and facilitate the dissemination and use of water-related information through up-to-date technology;
- To stimulate water resources assessment activities;
- To strengthen co-operation at the basin, regional and international levels as a contribution to integrated water resources management;
- To enable the availability and use of water-related information for larger scale applications in other WMO and international scientific programmes; and,
- To establish a framework of guidelines and compatible standards for data collection, storage, dissemination and exchange.

ANNEX 4

WHYCOS INTERNATIONAL ADVISORY GROUP
TERMS OF REFERENCE AND COMPOSITION

Terms of Reference

The WHYCOS International Advisory Group (WIAG) shall (*):

1. Consider and advise on the concept, objectives, expected benefits/costs, and future development of WHYCOS.

2. Review and assess the status of WHYCOS, and of progress towards its objectives, and propose strategies for any necessary remedial action.

3. Review the relationship of WHYCOS with other relevant international programmes, particularly from the point of view of coordination and avoidance of overlap, and propose any necessary actions.

4. Identify and evaluate constraints on, and potential risks to, the future implementation and sustainability of WHYCOS, and propose strategies to minimise those risks. Risks include, *inter alia*, those of a financial, technical, operational, and institutional/political nature.

5. Consider and propose plans for effective marketing of WHYCOS, and ways and means to assure its future sustainability and appropriate expansion.

6. Review and advise on the Terms of Reference and Composition of the WIAG.

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(*) (taking WHYCOS to mean the overall Programme, its component parts, and the mechanisms for coordination among them)

Composition

The WHYCOS International Advisory Group shall be composed of:

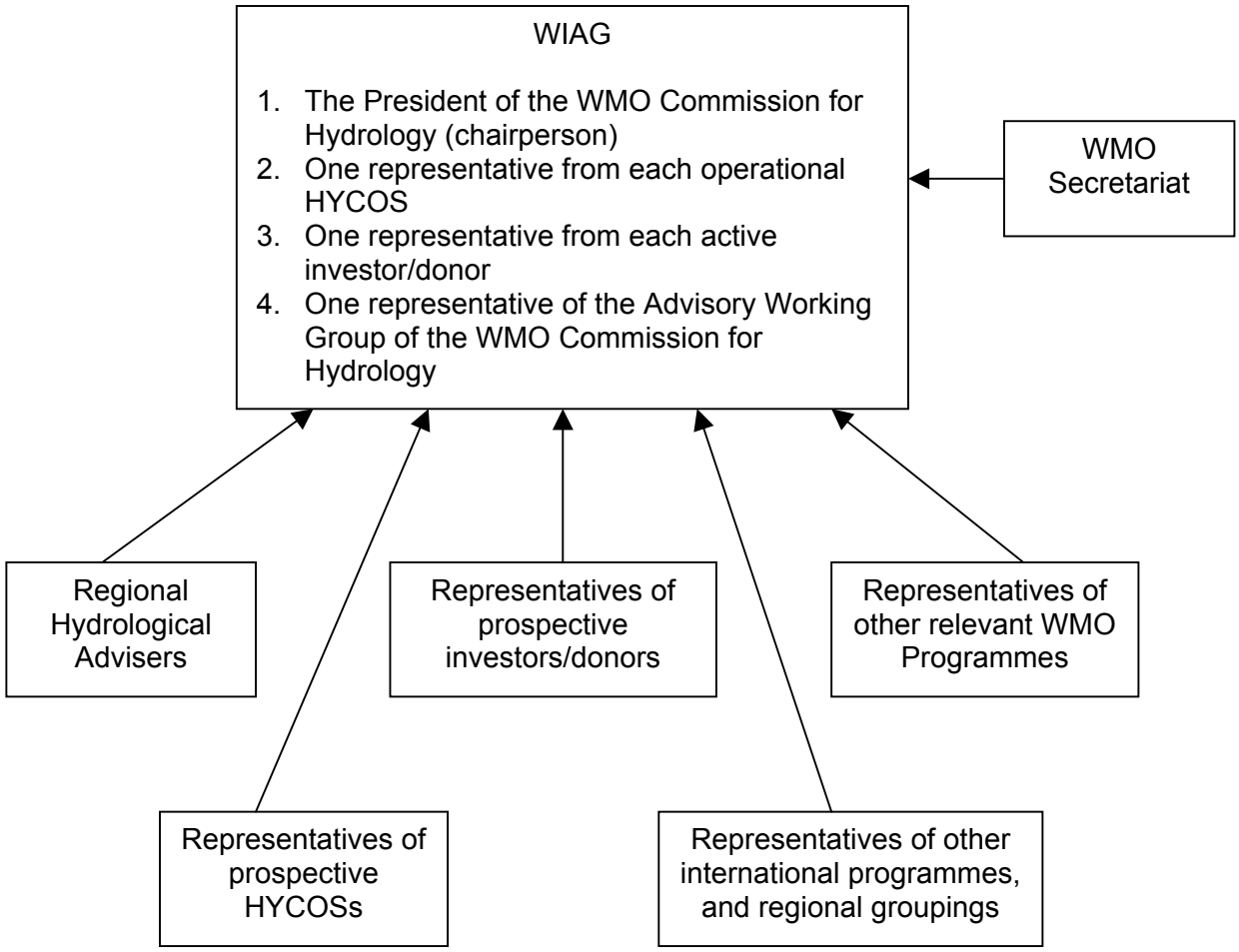
1. The President of the WMO Commission for Hydrology (chairperson)
2. One representative from each operational HYCOS
3. One representative from each active investor/donor
4. One representative of the Advisory Working Group of the WMO Commission for Hydrology

The Director, Hydrology & Water Resources Department of WMO, shall act as secretary to the WIAG.

Other persons may be invited from time to time to participate in the work of the WIAG, as observers and informants, including:

- Regional Hydrological Advisors
- Representatives of prospective investors/donors
- Representatives of prospective HYCOSs
- Representatives of other relevant international programmes and regional groupings
- Representatives of other relevant WMO programmes.

COMPOSITION OF WIAG



ANNEX 5

WIAG – CONSTRAINTS AND POTENTIAL ACTIONS

CONSTRAINT	POTENTIAL ACTION
▪ Staff in developing countries does not always have the skills required to install and maintain the equipment.	▪ Training is required, and it should cover practical and well as theoretical aspects. ▪ In-country training in installation and maintenance. ▪ Training requirements should be identified at the start of the project development.
▪ The financial support to be provided by the participating countries is not always available when required.	▪ Commitment to supply the resources should be obtained as part of the project documentation at the beginning of the project. ▪ Ownership of the project by all parties should be established at the beginning. ▪ Projects should be developed to meet identified needs.
▪ Institutional and administrative arrangements within countries sometimes inhibit activities.	▪ The right parties should be involved in the project development from the beginning. ▪ Commitment from the parties and for their country support should be documented at the beginning of the project. ▪ Ownership of the project by all parties is essential.
▪ Vandalism of equipment is primarily because it is state-of-the-art and attractive (e.g. batteries, solar panels)	▪ Identify a local person with responsibility for the equipment (e.g. general maintenance). ▪ Provide public education and public relations programmes aimed at community involvement and ownership of the equipment. ▪ Change the physical appearance of the equipment to make it less attractive, or damage resistant in nature (less visible and stronger).
▪ Communication problems, including narrow reporting time, cost and reliability.	▪ Need flexibility in the future to take advantage of new technology (e.g. cellular telephones, low orbiting satellites, etc.). ▪ The flexibility should be incorporated into documents at the beginning of the project. ▪ However, must recognize that on-going costs become an important issue (e.g. communication costs).
▪ Countries receive data in real time, but not necessarily the agencies requiring them.	▪ Establish communication linkages and requirements for the total system at the beginning of the project documentation. ▪ Look at alternative means of communicating data from one place to another (e.g. Internet).
▪ WMO Staff constraints	▪ WMO issue being covered by the Secretariat. ▪ Trust funds. ▪ WHYCOS focal point.

ANNEX 6

WIAG – BENEFITS OF HYCOS PROJECTS

SADC-HYCOS

- Damages reduced by flood warning and forecasting actions in southern Africa;
- Improved water and crop management by irrigation formers in southern Africa,
- Improved reservoir operation and use of water resources by electricity agency in southern Africa, through river in-flow forecasting;
- Reduction in the loss of data (gaps in records) by more timely action to address station breakdowns available through real-time monitoring;
- Management of inter-basin, international waters and their distribution;
- Drought forecasting (El Niño);
- Improved reliability of data.

MED-HYCOS

- Improving national data bases;
- Improved capability from regional to national level;
- Improved regional information base (including regional agency details, Web site);
- Between country exchanges of experience and technical capacity.