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REPORT OF THE CHAIRMAN OF THE

JOINT IOC/WMO WORKING COMMITTEE FOR IGOSS

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1. Summary

1.1 The Joint Working Committee for IGOSS had a productive year during 1983 and achieved several objectives. The IGOSS BATHY/TESAC Operational Programme continued to grow through increased participation from Member States. Several publications were finalized through the combined work of the Secretariats and participating experts. The IGOSS Sub-Group of Experts on Scientific Matters met in La Jolla, U.S.A. (12-16 December 1983) and a Regional IGOSS Implementation Co-ordination Meeting for the Extended Pacific Region was held in San José, Costa Rica (21-25 November 1983). Both meetings were very successful and were hosted by the U.S.A. and Costa Rican governments respectively.

1.2 IGOSS improved its liaison with the Joint IOC/SCOR Committee on Climatic Changes and the Ocean (CCCO) and is working closely with that Committee to ensure that the operational needs for ocean data are satisfied for the forthcoming series of ocean experiments. In this regard, IGOSS has now launched the IGOSS Sea Level Pilot Project (ISLPP) in the Pacific Ocean to enable such important parameters as heat content and atmospheric forcing effects to be monitored more closely.

1.3 The Joint Working Committee has been represented at several related intergovernmental and international meetings including the Fourth and Fifth sessions of the CCCO, the IOC Working Committee on International Oceanographic Data Exchange, the Scientific Steering Group for the study of the Interannual Variability of the Tropical Oceans and Global Atmosphere (TOGA), and the First Session of the UNEP-WMO International Symposium on Integrated Ocean Monitoring (2-10 October 1983), Tallin, U.S.S.R. Approval was obtained to allow this representation to be drawn from many Member States. Many national initiatives on IGOSS matters ranging from training courses to the establishment of Specialized Oceanographic Centres were also undertaken during the past year.

2. BATHY/TESAC Operational Programme

2.1 The number of BATHY messages exchanged over the Global Telecommunication System (GTS) of WMO increased during the first half of 1983 to a level equal to that of the First half of the FGGE year. The increase was expected, due mainly to the decision by the Commission for Basic Systems (CBS) of the WMO, allowing the transmission of delayed mode data over the GTS. Several automated systems for the transmission of bathythermograph data from Ships of Opportunity were also implemented in 1983. These systems show great promise and are expected to find wide application in future years. Other

technological advances that are imminent, and that will increase the flow of IGOSS data, relate to satellite communications and thermistor chains on drifting buoys. Another reason for improved data flow is that several countries have become active or have increased their activity (e.g. Australia, Canada, China, Iceland and Japan). The USSR has also greatly increased its contribution of TESAC data.

3. Activities Related to the World Climate Research Programme (WCRP)

3.1 The Joint Working Committee for IGOSS has been working closely with the Joint IOC/SCOR Committee on Climatic Changes and the Ocean (CCCO), the ocean component of the WCRP. The CCCO has decided to use existing mechanisms, such as IGOSS, as far as possible to compile the necessary data sets and data coverage required by the CCCO designed Programmes and the associated global ocean experiments in their ocean-monitoring programmes. One of the objectives of the WCRP is to design and establish an ocean observing system for climate forecasting which can be carried out in the future, using available resources and funds, manpower, and facilities. Such a system must include satisfactory arrangements for data transmission, exchange, quality control and availability to users. In developing this system, CCCO and the Joint ICSU/WMO Scientific Committee will look to IGOSS to take a lead role in the Stream One data system (within a few days) and co-operate with the Stream Two (within 30 days) data system.

3.2 One of the new requirements arising from scientists studying ocean/atmosphere interaction is for synoptic sea-level variation charts. In this regard, IGOSS developed and implemented a pilot project to produce monthly sea-level charts of the Pacific Ocean starting in 1984 and continuing for a five-year period. If successful, the project will become operational and extend globally to all ocean basins. Sea level data will be obtained throughout the Pacific basin and transmitted monthly to an IGOSS Specialized Oceanographic Centre (SOC) for analysis and compilation into monthly sea-level charts. These charts will be available to a wide audience of scientists and forecasters on an operational basis. Future developments in the IGOSS Sea Level Pilot Project (ISLPP) will consider the use of electronic mail for product delivery and the possibility of producing bi-weekly sea-level charts.

4. Publications

4.1 During the past intersessional period the Report of the Third Session of the Joint IOC/WMO Working Committee for IGOSS and the "Guide to the IGOSS Data Products and

Services System" have been published. Early in 1984 Manuals and Guides No. 3, "Guide to the Operational Procedures for the Collection and Exchange of Oceanographic Data (BATHY and TESAC)" will be published and disseminated.

5. Initiatives by Member States

5.1 The increased participation in IGOSS by many Member States throughout the year has been very encouraging. Initiatives have varied from increased observational programmes and recruitment of Ships of Opportunity to the offer of Specialized Oceanographic Centres (SOC) for the collection, processing and distribution of IGOSS data and data products. Specific activities worthy of mention include the substantial increases in bathythermograph IGOSS data input from Australian and Canadian sources. Argentina established an SOC covering the Southwest Atlantic and also offered to host an IGOSS training course. The U.S.A. has funded an SOC for the IGOSS Sea Level Pilot Project at the University of Hawaii. Japan is providing regional data products for the Northwestern Pacific and has offered to become an SOC for the Western Pacific and Canada has offered to be the SOC for all IGOSS drifting buoy data.

5.2 The Working Committee is also very appreciative of those countries that have hosted IGOSS meetings. During the past year, the governments of the Federal Republic of Germany, United States of America and Costa Rica have assisted IGOSS in this way.

6. Regional Development

6.1 A Joint WMO/IOC Implementation Co-ordination Meeting for the Extended Pacific Region was held 21-25 November 1983, in San José, Costa Rica, at the kind invitation of the National Meteorological Institute of Costa Rica. This meeting was held on the recommendation of a similar meeting in Tokyo in 1981 covering the Western and Northern Pacific Regions and was intended to extend the IGOSS initiatives, taken in Tokyo, to the whole of the Pacific basin. Eight Member States attended the meeting and contributions were received by correspondence from two others.

6.2 The meeting identified several opportunities for increasing the data flow from the Southeastern Pacific. This area of the ocean is data sparse, and increased use of Ships of Opportunity and drifting buoys will be necessary. The provision of IGOSS data products for the region will be temporarily facilitated through an offer by the U.S.A. to

provide the necessary data dissemination directly from Washington. The offers of future SOC's in Chile and Peru to undertake regional coverage as capabilities permit were welcomed. In the interim, national IGOSS products will be exchanged amongst regional centres. The designation of coastal radio stations to receive IGOSS data from the region was recognized as a priority requirement that would be addressed in the near future. The use of other communication aids such as the INMARSAT System and the USA's Geostationary Operational Environmental Satellites (GOES) was also encouraged to overcome the data transmission difficulties. An extensive discussion on regional problems of the GTS concluded with several suggestions for positive action. Finally, the Meeting recommended the arrangement of an expert visit to developing Member States of the Extended Pacific Region in order to promote IGOSS through roving sessions, making presentations to a number of scientists in each country.

6.3 The plan for the IGOSS Sea Level Pilot Project was finalized in San José during the week of the Implementation Co-ordination Meeting, taking advantage of the availability of several internationally recognized experts on sea-level measurements and ocean dynamics.

6.4 Although the regional plans for IGOSS development in the Pacific Ocean are the most advanced, the need for similar initiatives in other parts of the world's oceans is being addressed.

7. IGOSS Subsidiary Bodies

7.1 The IGOSS Sub-group of Experts on Scientific Matters Related to IGOSS met 12-16 December 1983, in La Jolla, California at the kind invitation of Scripps Institute of Oceanography and the government of the U.S.A. The meeting received presentations from experts on climate, acoustic tomography, remote sensing and ocean dynamics during the course of the week. Studies for the intersessional period were set up on acoustics, satellite ocean data products and biological productivity.

7.2 The scientific arguments and discussion led to many recommendations to the parent body including the following:

- IGOSS should be the chief intergovernmental mechanism for operational observation of oceanographic parameters.

- Funding agencies should incorporate specific instructions for data exchange when approving ocean programmes.

- The use of automated data collection and transmission systems for meteorological and oceanographic data is encouraged.

- Regional SOC's should be established in all ocean areas.

- Systematic errors associated with different data sources should be investigated through the development and comparison of discrete data products based on the respective data sets.

- If an operational monitoring program for CO_2 should be required by the WCRP, IGOSS should provide the mechanism for the exchange of such data.

- The requirements for monitoring biological productivity in the oceans should be studied and the possibility of establishing an IGOSS Biological Productivity Pilot Project (IBP^3)be investigated.

7.3 The Sub-Group expressed caution on the adoption of new technology and on the continuity of important time-series of data, and it was recommended that new technology be inserted into observation systems in parallel with existing measurement techniques over a period of at least ten years in order to provide historical continuity.

8. Representation

8.1 The Joint Working Committee deals closely with the work and requirements of other IOC and WMO subsidiary bodies, and therefore, when possible and appropriate, IGOSS representatives attend meetings and discussions. The use of IGOSS National Representatives is encouraged for reasons of economy and to strengthen the IGOSS network. During the past year, IGOSS representatives have attended the TOGA Scientific Steering Group Meeting, the Fourth and Fifth Sessions of the CCCO, the Eleventh Session of the International Oceanographic Data Exchange Working Committee, and the First Session of the UNEP-WMO International Symposium on Integrated Global Ocean Monitoring.

9. Future Activities

9.1 Obviously, the contribution that IGOSS can make to the ocean component of the World Climate Research Programme (WCRP) will occupy a major effort of the Working Committee over the next several years. The IGOSS activities are built on the contributions of participating countries and it will only be the efforts of Member States that will enable IGOSS to meet the requirements of the oceanographic component of the WCRP. In the short term, the observational programme for TOGA will be a high priority, and a special appeal will be made to Member States to ensure all data presently being taken in TOGA areas of interest are exchanged through IGOSS and IODE. The implementation of the IGOSS Sea-Level Pilot Project should provide interesting information for the climate research programme. Finally, IGOSS must begin to address its plan for the year 1986 and beyond.