THE CHALLENGES OF THE IMPLEMENTATION OF THE ASSIGNMENTS OF ISPRS COMMISSION VI (GENERAL REPORT 1984-1988)

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Commission VI

Abstract

The tasks of Commission VI cover a wide range of independent and unrelated subjects, each being significant and necessary in any future technological development, education and practice of photogrammetry and remote sensing. The activities of the Commission in the last four years had been directed at consolidating and completing programmes previously initiated, while attempts were made at defining other areas of activities to stimulate interest of members and encourage improved participation and contribution, This paper discuases the activites and the constraints in the implementation of the assignment of the Commission from 1984-1988 and focusses attention on the future challenges within its subject areas.

1. Introduction

Commission VI of the International Society of Photogrammetry and Remote Sensing (ISPRS) is responsible, interalia, for economics and business management of photogrammetry and remote sensing operations, professional and ethical aspects of photogrammetry and remote sensing; education including classification and retraining of personnel; international exchange of information, documentation and research in photogrammetry and remote sensing; standardisation of photogrammetry and remote sensing periodicals, bibliography of photogrammetry and remote sensing and history of photogrammetry and remote sensing. The policy objectives and initiatives of the Commission in the preceeding years had been to establish Working Group to conduct studies and research into the subjects and submit recommendations which are presented in the form of invited papers to the quadrennial Congresses of the Society. These recommendations are discussed and the decision to continue work in any particular subject is presented as part of the resolutions of the Congress. As a result of the approved resolutions of the XVth Congress of the Society in Rio de Janeiro, Brazil, (9) Working Groups were established to implement the Commissions programmes in the area of history, terminology, bibliography, technical co-operation, and education-inventory of manpower, education and research facilities, standards for education (including classification) and collaboration with other sister scientific and professional organisations in the areas of high level education.

We left Rio full of hope that by the end of this quadrennial period, Commission VI could complete the on-going/uncompleted projects initiated from previous years.

publish the book, 'Photogrammetry-historical review of methods and instruments'.

publish 'the ISPRS Multilingual Dictionary of photogrammetry and remote sensing terms and definitions in the three (3) official languages of the Society Viz; English, French and German and encourage translation and publication by other language groups.

negotiate the proprietorship and funding of the ISPRS - information retrieval system.

publish the standards for education at different levels in photogrammetry and remote sensing viz: operator, technical/technological and professional levels.

develop specifications for access to the Laval University, Quebec, Canada information and data bank on manpower, education/research facilities.

prepare guidelines on the requirements for bilateral-multilateral technical co-operation/assistance.

seek technical co-operation for developing countries to establish facilities in surveying and mapping and education where feasible.

initiate the writing and production of lecture materials, textbooks and other teaching aids in photogrammetry and remote sensing.

establish co-operation with Commission II in the area of instruments for education and Commission VII in remote sensing education.

report on the status and/or trends in its other subject areas of the International Documentation Centre, promotion and development of education, high level education, technical co-operation, all of which would form a basis for future activities of the Commission.

initiate research and studies into other subject areas considered to be important to the realisation of the objectives and goals of the Commission.

In pursuance of the above seven working groups were approved by the Council of ISPRS and established to conduct studies and research into the assigned subjects of the Commission as outlined in (3).

2. Commission VI Symposium 1986 Badagry, Nigeria

The mid-Congress Symposium of the Commission was held in Badagry, Nigeria from 22 - 26 September 1986. The Symposium was attended by 93 participants from seven countries - nine international delegates including one Nigerian who is an expert in remote sensing with the Outer Space Unit of the United Nations. Welcome addresses were presented, among others, by the Government of Nigeria, the Nigerian Society for Photogrammetry and Remote Sensing and the International Society for Photogrammetry and Remote Sensing ably represented by no less a person than our own President himself, Professor G. Konecny.

Prof. Adebayo Adedeji, the Executive Secretary of the Economic Commission for Africa presented the Keynote Address. He gave an overview of the capacities and capabilities of the National cartographic and remote sensing institutions in Africa. He decried the dearth of technical information for planning, development and rational utilisation of resources. He concluded that developing countries had to acquire the appropriate technology if they were to establish effective sovereignty over their natural resources.

Nineteen technical papers (including a lead paper on 'the significance of photogrammetry and remote sensing applications in developing countries' by Prof. Gottfried Konecny) were presented in seven technical sessions. The papers covered the activities of the Working Groups, the subjects of the Commission and the applications of photogrammetry and remote sensing in general.

A panel of experts led discussions in all the subjects areas of the Commission. The outcome of the discussions resulted in the conclusions of the Symposium. It is noteworthy that the focus of the symposium was on photogrammetry and remote sensing as a catalyst for economic development; with emphasis on developing countries. The participants paid a one-day visit to a private surveying and mapping company (Messrs Pan African Surveys (Nig) Ltd),Federal Survey Department - the Mapping Agency of the Federal Government of Nigeria and the Departments of Surveying and Geography of the University of Lagos.

Unfortunately, the Working Group Meetings could not be convened due to the poor international participation. Nevertheless many discussions were held by President Konecny, with the Commission President and some of the working group chairmen on most of the assignments of the Commission and later with Henri Latarche and Adigun Abiodun of United Nations on the ISPRS-IRS.

The technical papers and the conclusions of the discussions were presented in the proceedings of the Symposium, International Archives of Photogrammetry and Remote Sensing, Vol. 26-6 published by Commission VI ISPRS Nigeria (1984 - 1988).

3. Activities of Commission VI

3.1 Economics and Business Management

The conclusion of the XVth Congress of the Society by the Commission on economics and business management was that the recommendation of Jurgen Hotmer (11), be accepted, although

it was not resolved that the Bye Laws of the Statutes of the Society be amended to remove or transfer this assignment to any other Commission. The Commission gave consideration to inviting a paper on the commercial aspects of photogrammetry and remote sensing - particularly in the area of cartographic applications of remote sensing. The paper is to prepare general specifications for project planning, design and costing. It is realised that the specification would depend on the details of the project, and the economic, social and political factors which vary from country to country. Unfortunately these were just thoughts . There were no colleagues signifying interest and willing to undertake the work. Although the ISPRS is a scientific organisation, it is part of its responsibilities to give adequate attention to the commercial cum money making aspects of photogrammetry and remote sensing if it is to succeed in attracting the younger generation in this field of specialisation.

3.2 Professional and Ethical Aspects

Dennis Fernando of Sri Lanka presented a very brilliant analysis of the studies instituted by him on this subject at the Rio Congress (10). His conclusions were that the Commission should resolve to:

- establish an international professional institution in the field of photogrammetry and remote sensing at the higher professional level of competence under the umbrella of ISPRS.

- that the constitution of ISPRS be amended to reflect the above.

- establish a working group of Commission VI to tackle this problem.

The ensuing discussion chaired by no less a person than our past President Fred Doyle identified the need for Professional Institutions, but noted that the ISPRS was a learned scientific society and not a professional one. It comprised of member-societies and not individuals. Hence, the Society could only recommend what it considered as the acceptable minimum standard for professional competence to its members. The issue was therefore suspended pending the completion of the publication of the Standards of Education at various levels in photogrammetry and remote sensing.

3.3 Education, Classification and Retraining of Personnel

Working Groups VI/4 and VI/7 were approved by Council to implement the resolutions of the Rio Congress on Education Working Group VI/4, chairman Fred Adamec, was charged with the responsibility to prepare the standards of Education at various levels and the policy for the accreditation of courses, diplomas and degrees in photogrammetry and remote sensing. It was envisaged that his work would be completed before 1986. The embracing subject of photogrammetry and remote sensing education, the task of Working Group VI/7 (chairman, Sanjib Ghosh and co-chaired by Taichi Oshima and Ceasar Vou Te), is responsible for the

promotion and the development of education though the preparation of training packages and lecture materials and with emphasis on the needs of developing countries. It is obvious that any activity of Commission VI in education spans over the assignments of the other technical Commissions and those of the sister societies. This explains why seven (7) out of the nineteen (19) papers presented at the Commission Symposium were on education while 50% of the abstracts submitted for this Congress are on this. This clearly underscores the importance of education including research in the work of the Society. The Commission took cognissance of the areas of applications beyond the conventional cartographic applications viz mapping and concluded that there is the need to re-design and re-structure the curricula in photogrammetry and remote sensing at all levels to accommodate courses on the basic concepts and applications directed at specific needs, which could be reviewed periodically to accommodate new ideas (8). To this end, Working Group VI/7 was requested to prepare recommendations on the curricula for the various levels of education. Short term and extension courses to re-train personnel and update skill and knowledge particularly in new technology and instrumentation are realised through the organisation of Regional Workshops in co-operation with a member country within the Region (12).

3.4 Inventory of Manpower, Education and Research Facilities

An international information and data bank on the inventory of the world manpower, education and research facilities was initiated by Prof. Brandenberger at Laval University, Canada under the auspices of the United Nationas and with the ISPRS as a co-proprietor in 1972 and completed in 1980 (6). The Commission renewed the mandate to continuously update and expand the facilities to accommodate information on the world surveying and mapping organisations, statistics on the completed work, manpower and expenditures involved, education and to disseminate the information on global basis. It was hoped that this would be expanded to an International Documentation Centre to serve ISPRS and all the other organisations involved in surveying and mapping science (Brandenberger, 1980). The Joint Board Meeting of ISPRS, FIG, ICA and ISM endorsed the proposal and appointed an adhoc group to study the continuation of the Laval Data bank as a joint venture. A major concern has been that of access to the bank as no adequate retrieval software is available (13).

The Working Group was renewed in 1984 with the tasks redefined to include the establishment of the International Documentation Centre (in close collaboration with the ITC). The 1986 Symposium concluded that the Working Group should:

- prepare a detailed description of the contents of the Laval Databank and circulate to members.

- review, update and eventually modify the questionnaire on the inventory of manpower, education and research facilities in photogrammetry and remote sensing. This task was to be undertaken by a study group comprising a group of experts to be appointed by the Working Group.

. submit proposals to the International Union of Surveying and Mapping Organisations on how the Laval Databank can be made a component of the International Documentation Centre.

. the Working Group was to organise special workshops on the above.

3.5 Technical Cooperation

Commission VI established a Working Group to Study the problems of Technical Assistance/Cooperation, including acquisition and transfer of technology. The focus was to be mainly on Developing Countries and the assigned tasks of the Working Group included:

. preparing relevant information on policies and procedures regarding multilateral and bilateral co-operation in surveying and mapping.

. study the feasibility of establishing partnerships to support developing nations and develop solutions to meet the respective requirements; and encouraging the development and establishment of facilities in surveying and mapping including remote sensing.

To achieve the above, a special questionnaire was designed and circulated to assess the existing facilities and identify the areas of need and in particular, those countries requiring technical assistance, possible sources of funding and donor countries. The Working Group presented a status report of its activities. At the 1986 Commission VI Symposium, it was concluded that the task of the Working Group should be revised and updated to identify the nature of technical cooperation required by developing countries and possible sources; and the limitations in technical cooperation posed by finance, political issues and communications and submit proposals on how to overcome them.

3.6. Standardisation of Photogrammetry and Remote Sensing

Prof. J. Hothmer was appointed the Chief Editor of Photogrammetria the official Journal of ISPRS. He has successfully resusitated and rejuvenated the Journal, and has, in the last four (4) - year period, effectively disseminated information on the activities of the Society and its Working Groups, studies and research in photogrammetry and remote sensing, concepts and applications.

The XVth Congress urged that the Society should stimulate cooperation concerning Regional Periodicals but no further activity was initiated.

3.7 Multilingual Dictionary of Photogrammetry and Remote Sensing - Terms and Definitions

The campaign to produce an ISPRS Multilingual Dictionary was muted by Jurgen Hothmer in 1980, although not effectively

realised until 1982 when Gerhard Lindig and a few other colleagues accepted responsibility for the compilation of the Dictionary, initially in three (3) official languages of theSociety - German, French and English. A status report was presented at the Rio Congress in 1984, at which fourteen (14) language groups were already involved in the compilation of the glossary of terms and definitions. The English language group had completed about 3000 Entries and embarked on the definitions (4) with the publication of the ASP Multilingual Dictionary, the Working Group was renewed in 1984 with a mandate to review the ASP Multilingual Dictionary with the possibility of using it as input data base for translation by the other language groups.

In 1986, the number of language groups had increased to 19, and our colleague from Jordan, Major Odeh had offered to compile it in Arabic. The immediate preoccupation of the Chief Editor is to ensure that the English, French and German groups are completed and to encourage the translation/compilation and extension to other language groups.

3.8 Bibliography

The specifications for the ISPRS Information Retrieval System was approved in 1983. A position paper by Prof. J. Hothmer in Rio in 1984 had proposed that the financing of the Office responsible for the Database be a joint venture of the European countries. This was not realised. Other efforts to obtain financial support for the implementation of the ISPRS-IRS were unsuccessful. The 1986 Symposium of Commission VI therefore considered other possibilities and options, and decided that the ultimate goal of the Working Group was to document all Existing Data Bases. To this end, a questionnaire was to be designed to identify all types of data bases all over the world, determine their capabilities, review and publish the returns and update the information periodically. The United Nations Outer Space Unit has agreed to cooperate with the Commission on this task.

3.9 History of Photogrammetry

The book 'Photogrammetry - Historical review of Methods and Instruments' is to be published in 3 Volumes. Volume I was published by T. Blackhut and we understand that the text had been read by President Konecny and Vice President Zarcyski and would be acknowledged at the Congress. Past President Fred Doyle has accepted responsibility to edit Volume II. The Commission had also offered to review the manuscript before final publication.

4. Preparation for the XVIth Congress

It is to be recalled that the attendance at the Sessions of Commission VI at the Rio Congress was rather poor. The international participation at the Symposium of the Commission was even more disappointing. This has been attributed to the fact that our colleagues realise and appreciate the importance of the contribution of the work of Commission VI, but many of them would rather be engaged in the more challenging scientific areas of research. In preparing for the Congress, we have reverted to the old system of having a lead paper - the invited paper, to open discussion into the particular subject followed by other presented papers.

Our primary task at the Congress is to assess the achievements of each Working Group on the assigned tasks and determine the other areas for which research would be necessary. The Business Meeting of the Commission would be to review the work of the Commission, discuss the termination or review the tasks of any Working Group and in the case of renewal, clearly formulate the task definitions so that the goals and targets are clearly defined.

5. Constraints in the Implementation of the Tasks of Commission VI

The subjects of Commission VI span over the entire spectrum of activities of the ISPRS and indeed that of the other sister organisations. It is a service unit to the technical Commissions and a link between the Society and other sister organisations. Its work is not one of the competing priorities of ISPRS but the basic foundation without which the goals and objectives of the other technical Commissions cannot be realised.

A quick overview of the contributions of the Commission's activities from 1972 shows that very few colleagues have devoted their time to the work of the Commission. Most of the subjects require continuous review, assessment and updating. In effect, many working groups have been established for many years, and have the traditional approach of tackling the assigned tasks, mainly through the use of questionnaires (designed to collect global information of the tasks) and through the organisation of regional and local workshops. Experiences show that the responses to the questionnaires are poor and sometimes the information obsolete.

Participation at the regional workshops, symposia is limited in most cases to the immediate locality. Better international participation can only be realised if the host country can offer sponsorship. Even where this is so, the poor world communication system can mar a well organised and adequately supported programme.

Even when new innovations are introduced to supplement the traditional approach, the Commission has to have the where-withal to direct and monitor the activities of the Working Groups.

Ideally, the Commission should hold its meetings periodically to ensure that the programmes are well articulated and coordinated to ensure the realisation of its desired goal. The import is that the Secretariat should have the necessary financial and logistic support to host the meetings.

5.1 Recommendations

The basic infrastructural support for the Commision Secretariat need to be guaranteed.

Interaction between Commission VI and the other Commissions should be strengthened. To this end, Inter-Commission Working Groups of Commission VI and all the other Commissions should be encouraged, i.e. at any proposed activity of other Commissions a technical session should be devoted to discussions on how the assignments of Commission VI affect the work of that Commission.

In effect, a representative of Commission VI should serve the other Commissions. Commission VI can achieve and make considerable impact on the Society if the assigned tasks are tailored towards the defined goals.

Commission VI is to the other technical Commissions what Surveying, Mapping and Remote Sensing is to any Nation - the bedrock of all political, socio - economic and technological development programmes. To most countries, the importance of the latter is recognised yet policy-makers and managers only consider it as a tool to be used and dispensed with; hence, the inadequate budgetary provisions for its services. We, at every opportunity, decry this. Who do we blame for the neglect and poor participation in, or is it the lack of recognition of the importance of the assignments of Commission VI? The impact of the activities of the Society is better felt through the activities of the Commission. Future activities must therefore ensure that the Commission is given its pride of place through improved recognition within the rank and file of the Society. More active participation (in quality and quantity) in its activities must be encouraged. Its future programmes must be made more attractive and interesting. Efforts must be made to popularise and promote the Commission among ISPRS members. To this end, the future outlook should be formulated to clearly define the assigned tasks of the Working Groups its expectations, articulate the programme of work that could be achieve within a set time-frame, direct, monitor and coordinate these programmes to achieve specific goals.

6. Future Programmes/Implementation

Economics and Business Management

The economic factors affecting business and professional practice in photogrammetry and remote sensing vary from one country to another. These factors are yet to be compiled as guide for estimates in budgetary preparations for projects. In addition, a study of the cost implications of cartographic applications of remote sensing need to be under-taken. This task should be given priority in the immediate future.

History

Work is to be pursued more vigorously on the editing and publication of volumes II and III of the history of photogrammetry and remote sensing. The manuscript should be reviewed by ISPRS through Commission VI before final publication.

International Documentation Centre

This Centre should be established as a joint venture of all the Surveying and Mapping Organisation. In the absence of any other data on inventory of manpower, education and research facilities, a comprehensive and detailed description of the Databank at Laval University should be prepared if it is to

form the nucleus of the IDC. The task of the Working Group should be more vigorously pursued.

Professional Strategy

The work of ISPRS according to the statute, Section 26 of the Bye Laws, are technical and scientific in scope. The professional aspects deserve the attention of the Society and should be so reflected in the bye laws.

Technical Cooperation

In most Developing Countries facilities for education, research and practice of photogrammetry and remote sensing are obsolete if not totally lacking. Some countries are totally dependent on technical assistance from developed countries. We are all living witnesses of the rapid developments in this technology in the last few years. Developed countries are competing in the conquest of space. Remote Sensing applications have assumed new dimensions. The gap between developing and developed countries is getting wider. Yet it is desirable that we develop together. As the saying goes, 'Give a friend a fish, you would have fed him for one day, teach him how to fish, you would have fed him for the rest of his life.' Commission VI can make considerable impact in this area. The Society should encourage the developing countries to establish the required facilities and acquire the necessary technology not only as users of technology but as inventors. This can be achieved through international cooperation for joint research projects.

Standards for Education

The guidelines of standards for education and policy for accreditation and recognition of courses and studies should be published.

Education

Extension courses, retraining programmes and development of teaching aids and lecture materials should be more vigoursly pursued. Short term workshops and programmes should be encouraged.

Bibliography

The Working Group should continue its work as already outlined.

Terminology

Publication of the ISPRS Multilingual Dictionary in English should be the immediate pre-occupation of the Chief Editor and later, the publication by the other language groups.

7. Concluding Remarks

I left Rio De Janeiro in 1984 full of enthusiasm, backed by a team of experienced and knowledgeable Working Group chairmen I was sure that Commission VI could achieve its set goals and objectives. Unfor-

tunately the problems of developing countries are overwhelming, ranging from funding, logistics and political support. This has affected our performance considerably. Nevertheless, whatever little contributions we have made to the work of Commission VI were made possible through the cooperation of the Working Group chairmen and the advice and guidance of President Konecny.

Finally, I acknowledge the contributions of the Government of Nigeria and the support of all my colleagues especially those at Federal Surveys, and also the special dedication of each and every member of the Commission Board.

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