

PROFESSIONAL ASPECTS WITH EMPHASIS ON DEVELOPING COUNTRIES

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SUMMARY

The Council of Commission VI appointed me as the Rapporteur to Commission VI, Sub Section 12 on ' Professional Aspects with emphasis on Developing Countries ' and to report to the 1984 Congress. A circular was addressed to colleagues the world over on the professional aspects in developing countries. What emerged therefrom was not only the concern of professional aspects in developing countries but also the concern of developed countries to professional aspects within their countries as well. In addition there was the need to protect clients from amateurs and unscrupulous professionals, as this is a safeguard that society requires.

The time is ripe to professionalise the profession of Photogrammetry and Remote Sensing. We should recognise the necessity of having professional bodies at international, regional and national levels linked at a level of equal competence. In recognising their regional and national roles and cooperating with them at the international level and encourage its formation under the umbrella of the ISPRS as equal partners, promoting PKs.

- To give effect to this, resolution would have to be passed by the ISPRS, endorsing:
- (a) the idea of establishing an international professional institution in the field of photogrammetry and remote sensing as well as connected institutions namely, regional and national bodies linked at the highest professional levels of competence under the umbrella of ISPRS.
 - (b) to give effect to this, the necessary amendments in the constitution of ISPRS will have to be made.
 - (c) In the meantime, to give effect to this urgent matter, it would be necessary to have a full time working group in Commission VI to perform such duties so as to work towards these objectives as well as to service UN and other agencies and government bodies in order to assess experts for their service, if advice is called for.

1. Introduction

At the 1982 Commission VI Symposium held at Mainz,

I presented a Paper titled ' Proposed Professional Strategy to strengthen and enhance the Profession in Different Countries ' in Session 5 on Professional Strategy. (For details see 321 to 332 of Symposium Proceedings of Commission Vi Mainz 1982). The Council thereafter appointed me as the Rapportuer to Commission VI, Sub Section 12 on ' Professional Aspects with emphasis on Developing Countries ' and to report to the 1984 Congress.

A circular was addressed to colleagues on the professional aspects in developing countries. What emerged was not only the concern of professional aspects in developing countries but also the concern of developed countries to professional aspects within their countries as well.

2. Sri Lankan Experience

Further to the back ground paper submitted by me to the Mainz Seminar, I thought it would be apposite to indicate the more recent Sri Lankan experience, as it is relavant here as well.

In a small country like ours, it may not be possible to have professional institutions to cover only the aspects of photogrammetry and remote sensing (to say the least sub-dividing this further would be futile). In such instances, it would become necessary to bring it on

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an equal footing with other professional groups at a similar level of competence, in the fields of surveying. This is precisely what happened in Sri Lanka where persons fully qualified in Photogrammetry and remote sensing were considered part and parcel of the other sections of the Survey Profession.

Thus, we in Sri Lanka formed our own national society, namely, The Institution of Survey Engineers at the highest professional level incorporating the specialised fields of Photogrammetry and remote Sensing, Geodesy and Hydrography. This Sri Lankan experience had to be mentioned as small countries that have small numbers in the profession of Photogrammetry and Remote Sensing may have to adapt this approach if they are small in numbers and where one cannot find an outlet to obtain individual membership from recognised international institutions of the profession at appropriate levels. This may not necessarily be the best answer at a national level, but the reality constraints itself to these related areas of specialities for small countries. In the case of countries that have large numbers of professionals in Photogrammetry and Remote Sensing, this amalgamation does not arise.

3. Procedure adopted to obtain a consensus

In order to get a consensus to the formation of a professional body at the highest level of competence of the profession, at international, regional and national levels, a circular (see Annexure I to this report) was sent to colleagues in different countries, namely,

1. Country Representatives of ISPRS.
2. Rapporteurs of the different working groups within Commission VI of ISPRS.
3. Participants of the Mainz ISPRS Commission VI Seminar of September 1982.
4. Participants of the 1983 Kuala Lumpur ISPRS Commission VI Seminar held in Malaysia.

I also took the opportunity of addressing the circular letter to colleagues from different countries who participated at the 4th. Asian Conference on Remote Sensing, sponsored by Asian Association on Remote Sensing, hosted in Sri Lanka under the auspices of the Survey Department and the Japanese Remote Sensing Society in November, 1983.

To those who already do not know about this Asian Association on Remote Sensing (AARS), it is in its infancy, formed by a group who appear to be dissidents from the 1980 International Symposium on Remote Sensing of Environment in San, ^{Costa Rica} Jose / and is mainly centred

round remote sensing aspects from satellite imagery and does not have the broad spectrum of activities as the ISPRS and is therefore limited both in its scope and in its approach. My anticipated natural response from such a narrow group of persons of very wide and varying levels of competence and limited objectives was that they would either not be concerned due to their limited levels of experience, or in the alternative, treat this proposition as a threat to the young organisation of the AARS itself, by those who had first formed it. This proved rather prophetic. Be that as it may. For whatever the reason there was no response from this group.

4. Responses

Now I would like to expand on the responses I received from the different four groups mentioned earlier, namely, those directly concerned with the ISPRS.

Though the number of responses was not to expectations what observations and suggestions they made were very revealing and significant. It was originally thought that the problem of professional competence was limited only in the developing countries, what emerged from the consensus was that this also existed in the developed countries as well. In fact 100% of the responses agreed that there should be national professional bodies, but some of them deferred from its effectiveness at the regional and international levels, because of the many problems that would be encountered in its implementation. But what is important is that it was also agreed that it would be useful and desirable to have the institutions at all the levels, international regional and national.

We could divide the response into two categories.

- i. Those who tend to safeguard the interests of the client from the 'amateur',
- ii. Those who tend to safe guard the professional from the 'amateur'.

It is of interest to note that all those who responded were concerned to safeguard either the client or the professional, from the amateur and some were also concerned to safeguard both the client and professional, from the amateur.

If I may at this point take the liberty to quote excerpts from half a dozen responses both from the developing and developed world especially because some of them emanate from very well known, eminent and respected personalities of the ISPRS and also because it gives a good cross section of concerned opinions.

4.1. Surveyor General Pakistan,

National Correspondent Commission VI ISPRS.

" We however, endorse your idea of establishing International Professional Institution in the field of Photogrammetry and Remote Sensing."

4.2. Prof. Dr. A.J.Brandenberger,

Chairman, Working Group VI - I ISPRS.

" My views are as follows:

1. The problematics of professional recognition are very well formulated in your circular letter.
2. To me it appears that it is desirable to have professional recognition of photogrammetry and/or remote sensing at least in some countries; this would strengthen the "profession".
3. A resolution should be formulated and approved by the Rio Congress recommending (in principle) the setting up of professional institutions; however, indicating under what circumstances this could or should be achieved. "

4.3. Dr Morris M Thompson,

Rapporteur Commission VI ISPRS and

American Society of Photogrammetry (ASP).

" Your letter on "Professional Aspects with Emphasis on Developing Countries" presents an important issue that is of much concern in developed countries as well as in developing countries. The problem is: How can a client who lacks a technical background determine whether a potential contractor is professionally qualified to perform a specific project in photogrammetry or remote sensing?

In the United States, the problem has long been recognized and certain steps have been taken towards a solution; but these steps have proved to be only partial remedies, mainly because some clients do not know that remedies exist. The steps toward solving the problem have been taken in two directions by the American Society of Photogrammetry: 1) the establishment of a Voluntary Certification Program, and 2) the maintenance of a Sustaining Membership Program. "

..... etc.

" I believe it is highly desirable that an internationally recognized body be set up to advise clients (especially in developing countries) regarding the competence of potential contractors. This body would not pre-qualify persons in the manner of the A.S.P. programs, but would rather serve as an information source. Thus, if a client inquires if a certain individual or company has the competence to perform a specific project, the body would perform the necessary research and render a judgment. On the other hand, if the client requests that the body suggest qualified contractors to perform the project, a listing of suitable names would be provided to the client.

I would suggest that an appropriate Work Group be set up in Commission VI, ISPRS, to handle this service. Or, alternatively, the service could be incorporated as an additional function of W.G. VI - 12, Professional Strategy.

In any event, the national and international societies in our field should offer their assistance in protecting clients from being taken for a ride (as you expressed it) by amateurs. ¶

4.4. Dr A.S.Walker,

U.K.National Correspondent Commission VI ISPRS.

¶ I have not been able to sound out U.K. opinion very extensively. The impression I have gained, however, is that your proposals would not be enthusiastically received in this country. The feeling is that, certainly on an international or regional basis, they would be unworkable, however justifiable they seem prima facie. Clearly, it is less impracticable to create institutions on a national basis, as you yourselves have done, but there is some feeling here that it ought to be possible to distinguish between members of learned societies and professionally qualified members of learned societies without going to such lengths. It must be remembered, also, that incompetent professionals often go out of business or end up in the courts. Finally some institutions which require members to be professionally competent already exist, e.g. The Royal Institution of Chartered Surveyors, which has members in many countries.

Thus, while we would not deny that a problem appears to exist, we are not as yet certain that what you propose is the best way forward. ¶

4.5. Mr A.Adamec,

Chairman, Working Group VI - 10 ISPRS.

" In reply to your letter of October 10, 1983 concerning distinguishing between professionals and "amateurs" in Photogrammetry and Remote Sensing there is unfortunately little any international working group can legally do. However, through members of ISPRS some degree of pressure may be exercised on organizations and individuals employing "amateurs" or assigning work contracts to such people. How much success, such pressure may have is questionable.

Here in Australia we have a system of registration of surveyors by law. A pre-requisite for registration is a tertiary degree of at least 3 years duration with subsequent two years of practical experience followed by examinations of practical and theoretical nature. A registered surveyor does not necessarily have to be a holder of a degree in surveying (unless he seeks registration in cadastral surveying), he can hold a qualification in an associated field such as cartography, photogrammetry or similar.

This provision, while not eliminating the possibility of non qualified photogrammetrists to work in the profession, makes it difficult. There are several people involved in "professional" photogrammetry who became so by long years of experience, new ones however will find it near impossible to establish themselves in the profession without a first degree and preferably also at least a post graduate diploma in Photogrammetry and/or Remote Sensing.

I would be pleased to see a discussion on this very aspect generated by a paper from one or more of the developing countries.

The degree of recognition of
International
Regional and
National
may be a good starting criterion in our discussions. ¶

4.6. Prof. I.A.J. Van der Weele,
 Rapporteur Commission VI ISPRS.

.....

" Dear Mr. Fernando. From the foregoing you might come to the conclusion that in my opinion your efforts to come to some kind of internationally accepted standard for experts in photogrammetry and remote sensing is useless and utopian. This is certainly not the case. My preliminary purpose was to act as the devil's advocate by showing the difficulties that you may meet in pursuing your endeavor in order that you could better arm yourself against the opposition that you will certainly meet. Besides, when I came to the beginning of this page I suddenly got an idea that might give a temporary solution to the problem. In the first place it will of course be necessary to convince the photogrammetric community (including interpretation and RS aspects) that there really is a problem. The only way to achieve that is by continuous harping on the same string. This might cumulate in the recognition that for experts in the field of photogrammetry and remote sensing a proper assessment or evaluation is only possible when far more details about the education, experience and specialisation is required than is usually contained in the papers and forms that the potential candidate has to provide. If that idea is accepted the road is open for the presentation of a detailed questionnaire that could replace the present forms and that would contain questions that would answer the doubts as I have mentioned in the foregoing pages (although these are certainly not complete). In addition the potential candidate should be required to give the names of a few independent persons who could give objective information on the individual properties of the candidate as mentioned above under the heading 'mentality'. When this would be an accepted procedure it would solve at least a part of the problem, provided that the receiving party in the developing country is able to judge the information properly. I hope that this letter may contribute to your task of presenting the subject at the next congress and I wish you much success in this endeavor."

5. Analysis of the Responses

These responses could be considered as part of reflections of concerned eminent personalities, which have to be taken into consideration in the development of the profession of photogrammetry and remote sensing, from the different logical stages of evolution from ' Amateur ' to academic to professional.

We have a close analogy which is reflected in the development of science and technology. In the early days we had the pure scientist and the skilled genius working independently till the industrial revolution came along, where pure science fed applied science or technology whence professionalism emerged. Now technology is feeding science because new technology develops new avenues of science and vice versa in a mutual togetherness in research and development of science and technology. It is often/difficult to divide the one from the other at the highest levels of the profession.

In short at the highest level of the profession of Photogrammetry and Remote Sensing we are both academic and professional and therefore both interests have to be safeguarded. It may naturally be asked, safeguarded from what or whom? Safeguarded from the amateur. Not only that, we also have a duty to safe guard the client from the amateur and the unscrupulous professional, who has no code of conduct or ethics. This is a safeguard that society requires.

5.1. Dissident groups

There is another important phenomina that I thought would be apposite to mention here ; namely, the emergence of dissident groups, calling themselves by various names that imply that they are specialists in different fields of specialisation. What is sad about this is the fact that one of them was born at the 1980 by dissidents at the San Jose / ^{Costa Rica} International Symposium on Remote Sensing of the Environment ' and they named it the ' Asian Association on Remote Sensing' (AARS). Some of the individuals who formed the new alliance gave as one of the excuses that the developed world is dominating the developing world - which is true.

If I may quote the exact words coming from the Founder General Secretary of the AARS, Prof. Shunji Murai at his opening address at the 4th. ACRS in Sri Lanka, November, 1983. (from proceedings)

" together with many Asian scientists at the International Symposium on Remote Sensing of Environment in San Jose, Costa Rica in April, 1980, we, Asian scientists discussed how to promote remote sensing activities in Asia. Although each Asian country has a tight channel with a certain Western country, there is no tight channel amongst Asian countries. At the Costa Rica Meeting, we reached the conclusion that we should have an opportunity in the form of the Asian Conference on Remote Sensing where we can meet each other, exchange information and search for regional cooperation in future. "

However I also wish to quote again from the same author at the same ACRS in his paper on ' Development Policies of Earth Observation System in Japan ' ..

? INTERNATIONAL COOPERATION

- a. Japan would be a equal partner in international cooperation with self-developing countries.
- b. As a developed country, Japan shall also promote international cooperation with other developed countries in mission, finance, information exchange, international observation and so on. "

To my simple mind these are conflicting strategies as there is now a ' tight channel with a certain Eastern country ' (the quotation is entirely mine) so what is good for the goose must be so for the gander. This is very distressing, as we say in our country, we are ' only changing the side of the pillow', but the problem remains. There is in fact no difference to us in the developing world whether one is from the west or the other from the East who tries to dominate the developing world, both are equal evils.

What further distresses me is that though I have been active in the field of Photogrammetry and Remote Sensing for 25 years and being one of the pioneers in this field in Sri Lanka, I was not made aware of this association, till by force of circumstances, I got

involved with the 4th. Asian Conference on Remote Sensing held in Sri Lanka. The limits of the expertise at this conference was clear to me, as they say ' little knowledge is a dangerous thing' . Be that as it may.

Here I may have to sound a note of warning to the ISPRS. The very spawning of dissident groups is an ominous sign that the ISPRS itself has to take cognisance of. I do not want to sound like a prophet of doom ; but this is certainly a sign that changes are needed within the ISPRS for it to survive, after a glorious service in the past to mankind. The ISPRS has outgrown itself to monstrous and impersonal propositions and we therefore have to make it meaningful at international, regional and national levels.

Sooner than later there must be this awareness within the ISPRS, but I fear that it will come only through the maturing of problems and the disintegration of the ISPRS and not so much from enlightened anticipation of what needs to be done now to avert that disaster. Let us however not wait till nemesis overtakes us, we have to ponder and act now.

6. CONCLUDING RECOMMENDATIONS

What remains for us in the ISPRS is to adopt an implementation procedure that would be realistic and pragmatic to serve both the professional and the client safeguarding both interests so that clients are not taken for a ride by amateurs and that the professionals could be identified as competent to perform the professional activities undertaken by them, and promote the development of photogrammetry and remote sensing.

We should recognise the necessity of having professional bodies at international, regional and national groups at a level of equal competence and recognise their regional and national roles and co-operate with them at the international level as equal partners.

This report cannot be presumptuous in providing solutions, but only in posing pertinent problems, that face us. We have to decentralise the ISPRS without lowering standards of competence. This could be done by forming regional groupings and encourage the formation of national bodies, under the umbrella of ISPRS.

What is needed is the application of new managerial tools to guide that process to reach the objectives of professionalism avoiding the usual known pitfalls. This could be achieved if we use also the 'top down' approach in the planning process and not adopting only a lassifaire attitude or the 'bottom up' approach only. This two way approach would tend to obtain effective solutions to the problems facing us, faster.

If I may illustrate the point, if we work on the idea of moving towards the three levels - international, regional and national which have to be coherently linked, then it is my firm belief that these temporary shortcomings could be overcome on the long term by drawing up such a plan of linkages.

Some of the ideals, to my mind, that we should adhere are given below.

1. Uphold the professional competence of its members and work towards enhancing the profession.
2. All institutions whether national, regional or international must be linked with the same level of competence.
3. Regional grouping would necessarily have cultural and social and geographic linkages.
eg. Language, areal geographic distribution and other common links.
4. The international group should comprise regional groupings reflecting the consensus of the regions.
5. The regional groups comprise and reflect the interests and common problems facing the regions.
6. Prevention of dominance of one national body over another or one regional body over another, with a co-operative objective to help one another; so that all could be equal partners in the development of the profession and safeguard the interests of the client.
7. Advice international agencies that the time is ripe to have an internationally accepted standard for an expert in Photogrammetry and Remote Sensing and that detailed questionnaire should replace the present forms used, that would answer more questions enabling the choice of real experts.

6.1. Recommended Resolutions

To give effect to this, a resolution would have to be passed by the ISPRS endorsing;

1. the ideas of establishing an international ^{professional} institution in the field of Photogrammetry and Remote Sensing as well as sister institutions - regional and national bodies at the highest professional levels of competence under the umbrella of ISPRS.
2. To give effect to this, the necessary amendments in the constitution of ISPRS be made ;
3. In the mean time, to give effect to this urgent matter, it would be necessary to have a full time working group in Commission VI to perform such duties^{so} as to work towards these objectives as well as to service UN and other agencies and government bodies in order to assess experts for their service, if advice is called for.

12th. December, 1983

. Sri Lanka.



INTERNATIONAL SOCIETY FOR PHOTOGRAMMETRY AND REMOTE SENSING
INTERNATIONALE GESELLSCHAFT FÜR PHOTOGRAMMETRIE UND FERNERKUNDUNG
SOCIETE INTERNATIONALE DE PHOTOGRAMMETRIE ET DE TELEDETECTION

COMMISSION VI

Economics, Professional Aspects, Education, Periodicals, Terminology, Bibliography, History, International Exchange of Information

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10 October 1983.

Dear Colleague,

Professional Aspects with emphasis on
Developing Countries

Developing countries face the dilemma of being unable to distinguish a professional from an amateur in Photogrammetry and Remote Sensing. For example, we find that persons who join societies that are basically academic in character with no limitations on proficiency or competence, except an interest in the subject, use these memberships of mere societies, to state their professional competence, and even compare themselves with well known professional institutions like those in fields like civil, mechanical and electrical engineering for example. This has happened in Sri Lanka and I am informed in other developing countries too.

If I may quote from the Commission VI Session Report of 1983, held in Mainz, Page 333 - para. 5. Prof.Konecny (FRG) says :

" To a certain extent, the cultural surrounding reflects also on surveying, mapping and photogrammetry. Different countries have the same problem, but in different forms. Within Europe surveying is fairly well established. In Latin America for example, a measure in part is achieved by the statement ' I am an ITC Graduate ".

As one could see, there is a necessity to assess the professional competence as to whether one is capable of independent consultancy and management in the field of Photogrammetry and Remote Sensing. There is the present need of knowing whether a person is professionally competent to carry out an assignment in Photogrammetry and Remote Sensing. This need has to be satisfied, because many countries especially in the developing world are taken for a ride by amateurs, both from the developed and developing world as well.

I am glad to say that in Sri Lanka we have now formed a Professional Body called the ' Institution of Survey Engineers', wherein we have sections in Geodesy, Photogrammetry and Remote Sensing and Hydrography to meet the needs to assess professional competence in the different specialities. Though this is a professional institution, there is also provision to accomodate those who do not have professional competence but have an academic interest to take part in the academic aspects of the institution but classified as a seperate entity.

contd.

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This I must say evolved, 25 years after the need was felt, in fact too late. (However it is better late than never.) The question I would wish to ask is, do the other developing countries also have to wait another 25 years to realise the need for such a professional body (during which time amateurs do great damage) ?

Today there exist the definite problem in developing countries as they are unable to distinguish the professional who is competent to undertake professional work and those who are not. This is more so especially in developing countries, as these highly developed techniques are vital; but as they are rather relatively new, only a few locals, if any, are able to distinguish a professional.

At the 1982 Commission VI Symposium at Mainz on ' facing the future of scientific communication, education and professional aspects including research and development in Photogrammetry and Remote Sensing', it was decided by the Commission Board among other matters that according to by law 25 that, I function as Rapporteur Commission VI ISPRS to report on ' Professional Aspects with emphasis on Developing Countries ' and report to the 1984 ISPRS Congress at Rio de Janeiro.

In this connection, it is necessary to bring out the consensus, as to whether there is now a felt need to professionalise the discipline of photogrammetry and Remote sensing ?

The ISPRS as it consists today under its present constitution is mainly academic in character enveloping different levels of ' Academics' from the eminently qualified to those who show a passing interest in the subject.

The question to ask ourselves in the ISPRS is whether the present situation and the role played by the ISPRS should be purely that of only an academic body. Is there a need to have a professional body in Photogrammetry and Remote Sensing ? If so, would it be possible to have an internationally recognised Institution within the ISPRS or outside it.

The time is opportune to examine the proposition whether we should have an International Professional Body in Photogrammetry and Remote Sensing to which the national bodies or regional bodies could be affiliated to or where even individuals could be members.

This note to you is to have your views on the necessity and feasibility of having a professional institution in the field of photogrammetry and Remote Sensing.

- 1. Internationally recognised,
- 2. Regionally recognised,
- 3. Nationally recognised.

(In this connection, I am also enclosing a copy of a paper I presented at the Mainz Commission VI Seminar that triggered the question, as background information by those who have not already read it)

I shall be glad to have your views in a short note to me within a month of receipt of this letter, if possible, so that these views could be embodied in the report I would present at the 1984 Conference at Rio de Janeiro.

Thank you for your co-operation.

Yours sincerely,

A Denis N Fernando
(A Denis N Fernando)

Rapporteur Commission VI - ISPRS

- cc. Prof. Frederick J Doyle,
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