Physics for Development Development for Physics

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It is widely accepted that the industrialised countries owe much of their high material living standard to an ever increasing understanding of the physical laws and their applications to practical uses. We also know that this high living standard is enjoyed by only a minority of the world's population.

During the last decades, much work and money has gone into promoting the transfer of technology from the industrialised to the developing countries, but whereas there are many examples of success there are numerous cases of projects having failed. The reasons are complex — political, financial and sociological — and we shall not discuss them in detail here.

It is sufficient to note that the essential basis for independently maintaining and further developing a country's technological activity is a wide-spread practical understanding of physical laws and phenomena.

The industrialised countries make large investments in both basic and applied physics research in order to keep up with demands and competition. Unless the developing countries similarly can build up their own research and develop it according to their own needs, they will always remain dependent on the industrialised countries.

The necessary understanding of physical phenomena and behaviour can only be obtained through the proper teaching of the subject throughout the school system. And to achieve this goal the scientists at the universities and other institutions of higher learning must be given proper research facilities.

This is where I believe that we, the members of the European Physical Society have a clear obligation to help, thereby making our professional contribution to the betterment of the situation in the developing countries.

The most effective way of bringing this about is by working with the physicists in these countries and establishing joint projects that are more than simply one way teaching systems. The more such projects can develop into long-term collaboration, the better are the chances for a lasting impact on the development of physics research, and the more rewarding the activities will be for the physicists involved. However, scientists from the industrialised countries taking part must also recognise that they have to spend time in the country with which they are engaged to understand the particular situations, problems and challenges that will arise.

To help members of the EPS participate in such joint projects, Council in March (*Europhys. News*, **16** [1985] 5) approved the establishment of an:

Interdivisional Group
on Physics for Development
I G P D

Round about the beginning of October 1985 the IGPD sent to physical societies in Europe and to institutions and societies in developing countries an Invitation to Participation, which I should now like to extend to you the reader personally.

Background

There are many arguments that lead to the conclusion that it is desirable to increase cooperative research efforts between industrialised and developing countries and to locate experimental equipment in the developing countries whenever possible.

Physics research, and in particular experimental research, is for many reasons disproportionately conducted in industrialised countries, as compared to the developing countries and the direction of the development of physics including applied physics and technology has been determined by a rather small and relatively homogeneous part of the world's population. Consequently the benefits of collaboration will not be just one way. Two effects beneficial to research as a whole can be expected:

a) The world's research capacity will be increased and it will be possible to carry out experiments which might otherwise never have materialised.

b) Research will be enriched by new ideas emanating from the challenges of an environment with different natural resources, from different human desires and from physicists of different cultural backgrounds. Consider as an example the energy-related physics research needed if it were found desirable to let all mankind have the same transportation privileges (cars, planes, etc.) as is now found in industrialised countries.

Operation of the IGPD

As stated above, the main initial aim of the IGPD is to encourage cooperative experimental research programmes involving physicists from industrialised and developing countries. For this the Board of the IGPD is prepared to act as a secretariat, a liaison. The Board will upon receipt of letters of interest from physicists act as a "matchmaker" and convey to the writers appropriate information for establishing contact.

We are therefore inviting interested physicists in both the developed and developing countries to write to us giving:

i) the idea behind, and the aim of their proposed project,
ii) the potential involvement of the author, i.e. the size of the group interested, their possibilities for extended stays in a developing country etc.,
iii) a rough estimate of the resources needed to start the project, i.e. personnel, capital investment, assistants, fellowships, replacements for physicists on leave etc.,
iv) the possibilities for obtaining funds from national sources (university, governmental, development aid agencies etc.), or whether funding by international agencies would be required,
v) preferences for region of collaboration, such as geographical location, language group (English, French, German, Spanish, Portuguese) etc.

Based on such information we shall then put groups of similar interest in touch with each other.

Initially we recommend projects of a rather concrete and limited nature, although the Board is not averse to the thought of establishing, in due time, larger projects like centres of experimental research to serve a country or a geographical region.

We should also emphasize that projects need not be restricted to physics alone. Projects covering broader fields between physics and other sciences (informatics, chemistry, biology, geophysics, agriculture etc.) may in many cases be of even greater interest than pure physics projects and may more directly lead to new developments.

It should also be noted that although the Board of the IGPD favours research projects to be carried out in developing countries, it also welcomes plans for

joint projects that have to be carried out in the industrialised countries, *e.g.* because special installations are needed.

The IGPD and Education

High school and undergraduate teaching of physics in developing countries frequently suffers from a lack of suitable textbooks and demonstration and laboratory equipment. This was clearly stated at a symposium on the State of Physics and Mathematics in Africa at ICTP, Trieste, October 1984.

There are therefore great challenges for research physicists and physics teachers in industrialised countries to enter into close cooperation with physicists in developing countries in projects to overcome such difficulties.

We therefore also invite proposals for projects in this direction, be it for the development of textbooks, equipment, or for exchange programmes.

Financing

The financing of the projects should be a joint effort by the countries involved. The Board of the IGPD will, if necessary help in locating funds for the projects from national and international organizations. The nature of the projects will generally be of such a character that we can expect support from the various funding agencies for development aid too.

UNESCO has shown great interest in the plans of the IGPD, already giving a grant to help the IGPD get started. With good proposals for projects the organization will, whenever necessary actively aid the IGPD in locating international funding.

The problem of funding should therefore not keep anyone from forwarding ideas!

Membership

Membership of the IGPD is open to Individual Ordinary Members of EPS and an invitation to register was included with the recent invoice sent out for the annual fee. A member will have the possibility of influencing the development of the policy of the IGPD and will be kept informed of the Group's activities. And remember: the larger the membership, the more weight the proposals and the projects of the Group will carry.

Note however, that participation in the projects of the IGPD is open to everybody.

I hope you will take time to consider the purpose of the programmes, take the challenge seriously and engage yourself in collaborative projects with physicists in developing countries. You will then take part in the opening up of possibilities for new developments in physics and technology and thereby also for the betterment of the living conditions of the world's growing population.

The IGPD has already received letters of interest from physicists in developing and industrialised countries. We are now eagerly awaiting your letters, individual or group letters, indicating your interest and your possibility for participation.

Questions concerning the IGPD can be addressed to any of the IGPD Board Members*. Letters of interest should be addressed to the Chairman, either at his Bergen address or through the EPS Secretariat in Geneva.

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