

J.F. McDIVITT: Some aspects of mineral development in the ASEAN Region: needs for the promotion of mechanisms for overcoming non-technical obstacles to international mineral development

This Technical Talk by Dr. James F. McDivitt was co-hosted by the Society and the Institute of Mineral Engineering Malaysia on 15 October 1982 at the Conference Room, Pemas Charter Management Sdn. Bhd., Wisma Bunga Raya and attended by an audience of about 40.

Dr. McDivitt, a familiar figure in this region, has held the office of Director, UNESCO Regional Office for Science and Technology for Southeast Asia in Jakarta 1967-1979 and the UNESCO Division of Technological Research and Higher Education in Paris 1979-1982. As such, Dr. McDivitt with his vast experience, was particularly very much at home with the subject of his talk.

In commenting on the very great changes which are going to take place in world industry including the mineral industry in the remaining years of this century, Dr. McDivitt referred to two recent books. The first is the latest publication of the Club of Rome titled "For Better or for Worse - the Impact of Micro-electronics on Society", which supports the belief of many that we are on the verge of a new revolution which will see a large part of today's job market taken over by electronic devices such as microprocessors, robotics. This book emphasizes the social implications which will be quite devastating, so much so that employment as it exists today will be wiped out.

The second book titled "Japanese Technology - Getting the Best for the Least" is by Masanori Moritani of the Namura Research Institute of Tokyo, a well-known specialist on R & D management and analysis. He

contends that, based on existing technology, and with heavy emphasis on the as yet only partially realized potential of micro-processors, revolutionary innovations will continue to be developed in a wide variety of fields which will change the structure and character of industry. Taken together, these books present a challenging and somewhat frightening picture of a future which is already on our doorstep.

We already see something of this in the mineral industry with new approaches to exploration including such things as satellite imagery, in the mines themselves with growing computerization, and the obvious jobs for robots, and in mineral processing where, for example, the potential of microbiology is being given increased attention. More and more of today's engineers and technicians must be and are knowledgeable in the various and expanding applications of microprocessors to their work, applications which even a decade ago were unheard of. But with the potential for improvement and innovation, and above all, with the much lower costs of electronic technology, this must only be the beginning.

It is clear that the nature of the mineral industry will change significantly both on the demand and on the supply side, and in many cases we cannot even guess at these changes. Markets will change as the nature of society changes, with relatively more emphasis on light and specialized metals and on some of the rarer elements required by advanced technology. But markets for basic metals - iron, copper, tin, etc., can be expected to hold up well as new supplies are devoted to meeting the enormous accumulated and latent demand for transportation, appliances, building materials and services of the developing countries whose people will increasingly share in the benefits of technology.

Perhaps it is on the supply side that the most apparent changes will take place as we see the increasing use of radio-controlled and computer-programmed trucks and drills and various forms of earth-moving equipment, and of robots in many of the more dangerous and unattractive tasks both underground and in the mills and processing plants. And in all this, studies have shown that low-wage countries have no advantage, and that there is no practical wage level at which human labour can be cost competitive with such technology.

If one agrees that there is some validity to these concepts, it is clear that mining in the future (and the future is already with us) will be a very different ball game - different rules, different players. The experience will certainly be traumatic for most of us and early steps must be taken to make this transition as smooth as possible.

Over recent years a number of people have considered this challenge and ways to meet it. As one step towards this they are proposing the establishment of an international mechanism which would serve as a forum for officials and specialists involved with mineral supply to discuss and exchange views on issues and problems affecting long-term mineral development and supply, and to work out strategies to deal with these issues and problems.

The programme will be based on regular broadly based planning and review meetings supported by working groups and research studies to deal with problem areas in depth. It will prepare and distribute reports and newsletters and will work closely with the various bodies, UN, inter-governmental and non-governmental, working in related areas.

This will be only one step to face a changing world but it does have

potential to help the countries of Southeast Asia to identify and consider those issues which will have the greatest effect on them. Some additional information on this proposal was made available in a brochure for distribution.

FORUM FOR INTERNATIONAL MINERAL DEVELOPMENT

Background

Long-range mineral supply is emerging as one of the critical problem areas for the future. Much has been written on the subject, and a number of organizations give attention to it on a limited and sporadic basis, but at present there does not appear to be any group or body giving it continuing attention. To help fill this gap, it is proposed to establish a mechanism to analyse and review the full breadth of the problem area with a view to improving the environment for mineral development throughout the world, with some emphasis on the needs and potential of developing countries.

Basically, the world faces a situation in which meeting the raw materials needs of the developed world and the new industrial countries will call for increasing amounts of minerals which must be recovered from the limited and non-renewable resources of the earth. Significant amounts come from developing countries where they can make a major contribution to the economy and its development. In many cases large multinational companies which have mineral operations in many parts of the world are involved in this production.

The interests of these three main components (the consumers, the producing country, and the producing company) are not always in harmony. Thus the pattern of availability and supply does not always function smoothly and in the most efficient manner and it would appear that the resources of developing countries are not being opened up and used to the extent that seems warranted. Anything which can be done to improve the harmony within this system will improve the pattern today and for the future, both on the levels of assured supply and increased benefits.

The report of the Brandt Commission draws attention to the relatively weak position of most developing countries in the identification and development of their mineral resources, and the urgent need to take steps to remedy this. The report notes "Traditionally mineral exploitation in developing countries has been dominated by international mining companies, which provided capital, technical knowledge and marketing facilities, and bore the exploration risks themselves. There has often been a lack of balance of costs and advantages to developing countries. This pattern of exploration and investment has now broken down". The report goes on to discuss the causes for this and possible steps to improve the situation concluding "Here, therefore, is an area where new initiatives, involving imaginative new arrangements, can clearly be in the interests of North and South alike".

This is a realistic assessment which identifies among other things the need to establish communication and promote exchange and understanding involving the producers, consumers and producing countries, with a view to evolving a harmonious pattern of mineral supply for the future. The following proposal can be considered as one initiative towards this goal, designed to fill a gap in the present institutional structure.

Proposal

The proposal is to establish an international non-governmental programme which will serve as a forum for officials and specialists involved and concerned with long-term world supply of minerals on the technical, economic and political levels. These include representatives of producing and consuming countries and companies, financing bodies, regulatory bodies, associations and other interested groups. Within this neutral and constructive framework they will be able to discuss and exchange views on areas of mutual interest and concern and to identify and consider issues and problems which affect international mineral development and supply.

The programme will be based on regular planning and review meetings supported by working groups and research studies in special areas, and will include distribution of information and reports. This will involve setting up a small secretariat, possibly related to an existing administrative structure, to prepare and follow up on meetings, to commission and carry out studies, and to assemble and distribute information. It will work closely with UN and other bodies functioning in related areas.

Development objectives

Through improving the mechanisms and channels for communication and through development of mutual understanding between the various components involved in mineral development the forum aims to:

- promote increase in the level of development of and investment in mineral extraction and processing in developing countries;
- help assure the orderly expansion of mineral markets and the orderly flow of materials to satisfy these markets.

Programme structure

Programme activities are considered on five levels:

- (a) Periodic international assemblies, bringing together specialists from the several groups involved in the programme to discuss the broad area of long-term mineral supply and, more specifically, to identify and advise on present and potential issues and steps the forum might take to deal with them, and to outline and approve a programme of action. Once the programme is running, the assemblies would review results and progress;
- (b) Working groups would be established to study and prepare "state-of-the-art" reviews on specific issues which have been identified by the assembly. Working group meetings, in most cases on a regional or subregional level, would bring together 10-15 working level specialists with background and interest in the subject under discussion for 2-5 days, 2-3 times before reporting back to the next assembly. Their work might involve exchange visits which would allow staff of participating bodies to share experience and to work on problems of mutual interests;
- (c) Studies and analyses to support the reviews of the working groups can be carried out on a limited basis by the secretariat; are being or can be carried out by other groups and organizations with which cooperative links will be established; are being or have been carried out by organizations participating in the programme which may be willing to make all or part of the results of their work

available to the working groups; and in other cases, can be turned over to universities and other research bodies working in related fields;

- (d) Information services would initially consist of a quarterly newsletter outlining developments in the programme, notes on major developments of interest to participants, and abstracts or titles of recent articles and publications. Over time, it is expected that the programme will lead to technical papers, popular articles and books which will be published through normal professional and commercial channels;
- (e) International or regional seminars on specific subjects of wide interest, in some cases organized in cooperation with other groups working in related areas.

Administrative and operational structure

Because of the complexity and sensitivity of the field of mineral supply, special care is being taken to assure that all aspects of the programme are as balanced and unbiased as possible. As a step towards this, it is proposed that programme activities be carried out through a consortium or club consisting of a relatively large number of members (150 - 200) drawn from groups working in fields related to mineral supply, and paying a subscription. Members would be invited to attend the assemblies, and to nominate participants for the working groups. The consortium or club will be serviced by a small secretariat unit, consisting initially of a coordinator, an administration/documentation officer, and a secretary. The secretariat will receive guidance and instructions from an advisory council of specialists representing the various participating groups, which will serve as a board of trustees until a formal structure is approved.

During the first years the programme is expected to operate with limited staff and facilities. Office space and most facilities are expected to be provided by the host institution(s). There are advantages to locating the headquarters of the Forum in a developing country and, initially at least, it might share facilities with an existing organization working in a related area (AGID - the Association of Geoscientists for International Development - which has its headquarters at the Asian Institute of Technology in Bangkok, is a possibility). However, the Forum should maintain its own separate identity, and there are clear advantages to it being formally established as a non-profit, non-governmental organization once it has passed through its first stage of development.

Support

Support for the programme falls into two main categories, administration and programme. Much of the programme support will be for travel and per diem of participants to take part in the various programme activities, although it is expected that about half of this cost will be covered directly by employers of participants. By the end of the first five years, expenses are expected to build up to the order of \$500,000 per year, about 40% for administration and 60% for the forum share of programme activities. During the start up period of a budget about half this amount is foreseen.

There is advantage in obtaining support from as large a number of

sources as possible to avoid any question of pressure or bias. Support for core (administrative) activities will be sought in the form of grants from foundations, international organizations and programmes, associations and non-commercial bodies which have interest in the subject of the programme but which would be expected to participate to a limited extent in its activities. Support for programme activities will be sought from the large number of organizations which would be expected to participate actively in the programme, including producing and consuming companies, banks, investment groups, government agencies, mineral development associations and others. These would be members of the consortium and would pay an annual subscription (\$1000-\$5000) to participate in the programme. It is expected that over 2-3 years the list of participating members would build up to 150-200.

In practice it may not always be possible to split the support into core and programme in this way since many funding sources require that the major part of their support be used for programme activities. It seems essential that, even from the beginning, a significant part of the support come from mineral development related sources as an indication of their genuine interest and involvement in the programme. To facilitate the generation of support and the development of an effective structure it is proposed that the first three years of operation be considered as a development stage.

Development stage

During the development stage, special attention will be paid to building up contacts and structure, to developing the information services and to establishing and testing the working group procedures on a regional level. Most of the initial support is expected to come from sources outside of the mineral industry, while membership of the consortium or club is being built up.

During this period regional working groups will be established, initially in Southeast Asia where AGID has its headquarters and where there are a number of important mineral producing countries (Burma, Indonesia, Malaysia, Papua New Guinea, Philippines, Thailand) but at the same time there are no mineral dominated economies: and in Africa, where CERNA - Centre d'Etudes des Ressources Naturelles - is already developing related programmes. Operations will be extended to Latin America at the end of the developing stage, by which time decisions will have been made on the best long-term structure.

From the beginning this must be viewed as an international programme which deals with international issues, and to assure this it is proposed that each regional working group include participants from other regions.

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