

REPORT ON AN INTERNATIONAL WORKSHOP ON  
"TACKLING SOIL CONSTRAINTS TO FOOD PRODUCTION IN THE  
TROPICS", LEADING TO THE FORMATION OF AN  
INTERNATIONAL BOARD OF SOIL RESEARCH AND MANAGEMENT (IBSRAM),  
TOWNSVILLE, AUSTRALIA, 12-16 SEPTEMBER 1983

W.G. SOMBROEK



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Report on an international Workshop on "tackling soil constraints to food production in the tropics", leading to the formation of an International Board of Soil Research and Management (IBSRAM);

Townsville-Australia, 12-16 September 1983

by

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## I. INTRODUCTION

For several years already, an informal international steering committee has been trying to establish some form of entity to coordinate and stimulate management-oriented soil research in the tropics and subtropics, both at national level in less developed countries (LDC's) concerned, and at the international agricultural research centres of the CGIAR group. This resulted in a proposal (henceforth to be called "the Proposal") for the establishment and operation of an International Board of Soil Research and Management (IBSRAM), issued May 1983 in Canberra, with the financial support of Australian Development Agencies (ADAB + ACIAR).

The entity would comprise only a small core-staffing, and in its activities rely heavily on a number of soil research networks, the so-called Soil Management Units (SMU), which would be financially supported by varying groupings of individual donors of the CG group.

After sounding-out had taken place on possible interest of donor countries and Foundations in funding either core-activities or one or more of the proposed SMU's, the steering committee decided to organize the above workshop at Townsville in tropical Northern Australia. At this occasion the IBSRAM board might be officially established. Invitations went out to potential donors to send a representative to the meeting and to declare their degree of interest c.q. to pledge contributions (cf. letter of Drs. Greenland and Van Wambeke to DGIS/SMA of 25-5-83, annex 1, together with the Proposal). DGIS thereupon requested DLO to get together a small ad-hoc working group of potentially interested Dutch institutions in the sphere of tropical soil research and management, to give a critical comment on the Proposal and to suggest a line-of-action for DGIS. The report of this working group (cf. letter of Van Vuure to DGIS/SMA of 1-7-83, annex 2) formed the basis for a formal letter of DPO/00

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to the IBSRAM steering committee, in which it was indicated that the undersigned would be present at the Townsville meeting on behalf of DGIS (cf. annex 3). The letter also made clear that the Dutch Government is not in a position to provide any core funding to IBSRAM, but might be interested to take part in the funding of one or more of its SMU's, once properly elaborated and submitted. Also, it indicated that the services of ISM, funded to a large degree by DGIS, might be put at the disposal of IBSRAM, once established. The understanding was that travel costs for the undersigned would be recompensed by DGIS on advance-payment basis ('verschotten deklaratiebasis'), while local subsistence costs would be borne by ISM.

## II. ITINERARY AND PROGRAMME (see also annex 4)

Wednesday 7th / Friday 9th Sept.:

Travel to Townsville (KLM)

Saturday 10th:

Pre-meeting technical field tour to semi-arid zone west of Townsville

Sunday 11th:

Meeting of the IBSRAM steering committee with representatives of potential donors

Monday 12th / Tuesday 13th:

Presentation of the case for IBSRAM, election of a Board, modes of cooperation with other institutions active in soil research for the tropics (including ISM), and pledging of funding. Meeting of donor representatives

Wednesday 14th:

Technical field tour to humid zone north of Townsville

Thursday 15th and Friday 16th:

Presentation of presentday Australian research towards resolving soil problems in the tropics, and discussion of research opportunities for the recently established Australian Centre for International Agricultural Research (ACIAR, compare IDRC of Canada). Private visit to Davies laboratories of CSIRO in Aitkenvale, adjacent to Townsville.

Saturday 17th / Sunday 18th:

Return travel to Amsterdam (Quantas).

There were 60 participants of the meeting, of which 35 non-Australians. It took place at the International Hotel, in the centre of town, and was well organized. Copies of all presented papers can be consulted at ISM.

### III. RESULTS

#### a. Funding

Already during the first meeting of the steering committee with donor representatives it became evident that very few donors would be prepared to contribute to core funding of IBSRAM\*. For instance, the representative of USAID (Bertrand) indicated that:

- 1) the headquarters should be in a developing country;
- 2) organisational structure and administrative facilities should be kept small, the Board to deal only with coordination and facilitation of networks;
- 3) only a small core contribution was envisaged, but interest existed in supporting one or more SMU's.

Similar statements were made by the representatives of UK/ODA (Smyth) and Canada/CIDA (Bentley). Australia/ADAB (Hillis) would also contribute, to core funding only, without strings as to the location of the Board's headquarters. On this basis, total core funding was estimated to be \$ 100,000 for '84, \$ 250,000 for '85 and \$ 200,000+ for '86.

Representatives of BRD/GTZ (Scharpenseel), DGIS (Sombroek), IABD (Sanchez), France/ORSTOM (Ruellan), New Zealand (Miller), Japan (Kyuma), Canada/IDRC (Ker), Australia/ACIAR (McWilliams) and Ford Foundation (Cummings) expressed some degree of interest in SMU funding only. Similar future potential support for SMU's had been communicated in writing by NORAD, IBRD, Switzerland, Unesco, FAO, UNEP, ICRAF and IFDC. Belgium (ABOS) held out a vague promise of core support as well (see also annex 5). Noteworthy is that the EEC-DG8 had not bothered to react.

#### b. Election of a Board

On the basis of pledges as summarized above, the steering committee decided that the Board could be formally established.

Already several months before the Townsville meeting a nomination committee had solicited names for Board membership from potential donors, and international organisations likely to be involved in the running of SMU's. The resulting list of candidates - about 25 - appeared to consist largely of staff

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\*A suggestion of mine that the name be changed into Research, Assessment and Management" was considered to be too late for acceptance

members of the CG centres and of the steering committee itself. Noteworthy was the absence of nominees by the Scandinavian countries, the BRD (BMZ-GLZ), Belgium (ABOS), the Netherlands (DCIS) and the EEC. I subsequently established that this was at least in part due to late and incomplete addressing by the ACIAR office (see annex 6).

Representatives of the donors present, and non-nominated members of the steering committee were requested to elect 8 Board members. This 12-member election committee, meeting in caucus, decided that one should strive at a) one representative each of the four regions involved (Asia, Africa, Latin America, Middle East); b) some representatives of major donors; c) broad disciplinary composition (in addition to soil scientists also agronomists/economists and research planners); d) no predominance of members that were likely to be involved in the execution of one or more SMU's - i.e. the CG centres. The subsequent balloting resulted in the following: Prof.dr. F. Bentley (Canada), Dr. R. Dudal (FAO), Dr. R. Fauck (ORSTOM, France), Dr. W. Goedert (Brazil), Dr. D. Greenland (IRRI), Dr. R. McCracken (SCS, USA), Dr. R. Millington (CSIRO, Australia) and Dr. Chr. Panabokke (MoA Sri Lanka, formerly ISNAR). This was accompanied by a statement that the committee was aware that no full geographic and disciplinary representation was achieved; to be remedied during subsequent appointments by the Board itself. This referred mainly to a suitable African candidate and one from EEC circles (for both I suggested names of persons to be contacted soonest after the meeting). The elected persons subsequently choose Dr. Bentley as their chairman and started work immediately (see below). It also decided to have its next full meeting in Singapore in February 84, at which a draft charter and reformulations of soil management networks (see below) would be ready.

#### c. Location of IBSRAM headquarters

In accordance with the criteria for a suitable location of a headquarters, as spelled-out in the Proposal, the following formal offers were made, either in writing, at the meeting, or both:

- Los Baños, Philippines (University, or SEARCA)
- Bangkok, Thailand (Land Development Division of MoA)
- Nairobi, Kenya (KARI, NAL, or UNEP)
- Brasilia, Brazil (EMBRAPA's Cerrado Research Centre at Planaltina).

Australia, originally proposing one of its major cities, changed its position in view of the apparent preference of major donors for a developing country siting (see 3.a.) - but indicated it would still be available in case LDC siting would prove difficult. A Sri-Lanka siting was mentioned briefly, in connection with a suggestion of Dr. R. Cummings (ILMI Board) that it might be worthwhile to combine services and efforts of IBSRAM and ILMI as much as possible (not favoured by the majority of participants). Noteworthy was the plea by one LDC representative (Dr. Panabokke from Sri Lanka) that a site be considered outside LDC's, with a centre of excellence functioning as a merging point of different schools of soil science and its applications, with good documentation/computerization facilities, and optimal travel connections. The US representative (Dr. Bertrand) was not against the idea, but foresaw a rocky path of funding in case of non-LDC siting.

Towards the end of the meeting the newly installed Board had narrowed down its preference to Bangkok or Brasilia, and delegations would soonest visit both sites and discuss facilities to be put available by the respective countries.

In view of the expected lengthy negotiations of the siting and the very limited core funding for the time being, a prolonged "nursing period" was foreseen, during which time temporary housing for an embryonal staff would be required. IRRI and ISNAR were mentioned as possible nursing mothers (the latter by me), but also donor agencies like IDRC or ACIAR. Towards the closure of the meeting the Board had made up its mind to request ACIAR, Canberra-Australia, to function as temporary headquarters. This Centre would also act as implementing agency/legally constituted body, to receive the first contributions. The ACIAR representative agreed.

#### d. Donors' support group

The newly elected Board requested the donor representatives to form an informal support group for IBSRAM, to be composed of delegates from interested and potential donors, without a requirement of firm commitments in advance. This was agreed and Messrs. Bertrand (USAID), Ker (IDRC), Scharpenseel (BRD), Ruellan (France), Cummings (Ford Foundation), McWilliams (ACIAR), Smyth (UK), Miller (New Zealand), Hills (ADAB), Kyuma (Japan) and myself (DGIS) got together for the purpose. I rightaway indicated that my participation should be seen as temporary, because for one I felt to be too much involved in the technical

programming. I promised however to recommend strongly to DGIS to appoint an official representative in the support group (similar statements were made by Scharpenseel and Kyuma).

At my suggestion, Dr. Hills accepted reluctantly to act as liaison-man for the group. Several members would try to get together - with some Board representatives - during the forthcoming CG-Centre's Week in Washington (29th October - 4th November '83). A more formal meeting would take place in May '84 in Rome.

#### e. Soil Management Units and Central Services

##### Central Services

After invited representatives of Asia (R.A.D. Jones, Sierra Leone), Latin America (A. Lopes, Brazil), and Africa (Chr. Panabokke) had expounded the needs of their respective regions, the formal Proposal was further elucidated (Messrs. Greenland and Miller).

Because of the shortage of core funding, the central services would include an information storage, -organisation and -dissemination programme only at a later stage (1986). Because not much detail was given, the IDRC representative (Dr. A. Ker) then suggested a separate workshop to define need and scope of specialized soil information services.

There would be no separate central activity on soil survey and classification. Instead, the Board would request ad-hoc services in this field from SMSS (USDA-SCS), FAO, and ISM (sic.).

Also the training component was left rather vague, even after an exposé by the consultant Dr. Eswaran (he mentioned mainly the current USDA-SMSS activities in Soil Taxonomy propagation, omitting any reference to long-time training institutions like ITC). For the time being, any training programmes are likely to be strongly linked with individual SMU's.

Similarly, there would be no central services for improving soil laboratory facilities and output in LDC's. Dr. Scharpenseel (BRD) and Valverde (Peru; ISNAR) then suggested that ISM's current Labex programme be utilized as starting point for the purpose (see below).

Pleas were made (Greenland, Scharpenseel) for a service to inventorize all multi- and bilateral soil-related technical cooperation projects. It was



indicated that such a clearing-house facility may become supported by UNEP (its representative Dr. Olembo was unable to attend), as part of its World Soils Policy plan-of-action.

#### SMU's

A number of proposed Soil Management Units were presented, as follows:

- a) Oxult SMU (acid, marginal soils of the humid tropical uplands) - P. Sanchez.

Linkage with CIAT programmes and the REDINAA\* network

- b) Land clearing SMU (problems of land clearing and post-clearing management in the humid tropics) - R. Lal.

Linkage with IITA

- c) Vertisol SMU (development of adapted cropping systems in black cracking clays, mainly in the semi-arid tropics) - L. Swindale.

Strong linkage with ICRISAT

- d) Arid Lands Utilization SMU (management of crusting soils of semi-arid areas) - R. Fauck.

Linkage with ongoing work in the Sahel region

- e) Wetlands SMU (soil and water research on paddy-rice lands) - T. Woodhead.

Strong linkage with IRRI programmes (but no mention of IITA-DGIS West-African wetlands research and management project!)

- f) Easily erodable Alfisols SMU (management of easily compacted and erodable non-acid upland soils of the subhumid tropics) - R. Lal.

Strong linkage with IITA

- g) Cerrado Soils SMU (management of areas with acid tropical savannah soils) - W. Goedert.

Linkage with EMBRAPA Centre near Brasília; in fact a subunit of a)

- h) Steeplands SMU (characterization and utilization of shallow soils in mountainous areas) - S. Panichapongs.

No linkage, as yet site-specific for Thailand

It was felt generally that the proposed SMU's were presented in a very uneven and unsystematic way. Most of them appeared to be largely vehicles for strenthening of outreach programmes of the CG centres. Donor representatives

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\* a regional network for development-oriented research of the Amazon area, already agreed upon by all nine countries directly concerned, with partial funding already secured and therefore not submitted as an SMU of IBSRAM (Dr. Valverde as coordinator; next planning meeting in Maracai, Venezuela, March '84).

badly missed an orientation on real soil-constraints solving networks over all regions concerned, that would convincingly demonstrate the need for a separate international entity like IBSRAM. It was suggested that improved formulation of the SMU's be undertaken. This might best be done through the organization of international workshops, inventorizing the problem area, the institutions interested, and already ongoing bi/multilateral programmes in the field concerned (one such a workshop, on wetlands utilization, is in fact already planned for March/April 1984 at IRRI, with substantial input of USAID-SMSS).

No firm commitments for SMU funding followed. The USA expressed however some interest in the Oxult SMU (already partly supported by USAID's "Tropsoil" programme with North Carolina University); the BFD representative in the Alfisols SMU, and the DGIS representative in the Wetlands SMU (provided that the IITA activity in this field would become an integral component). I also indicated that among Dutch agricultural research institutions a consensus existed on the value of the Oxult SMU in combination with REDINAA (see comments DLO to DGIS).

In general, most donor representatives expressed their country/institution's preference for funding of SMU's through existing bilateral technical cooperation arrangements.

After these plenary discussions on SMU's, the Board met several times on the subject. It then decided to change the name Soil Management Units into Soil Management Networks, and made arrangements for re-formulation of the proposals soonest after the meeting. Provisionally, the following priority list was established:

- 1) Land clearing SMN (cf. b above)
- 2) Acid tropical soils SMN (cf. a)
- 3) Wetland soils SMN (cf. c)
- 4) Crusting semi-arid soils SMN (cf. d)
- 5) Black cracking clay soils SMN (cf. c)

f. Involvement of the International Soil Museum

I was invited to give a talk on ISM, its future activities, and the possibilities for linkage with IBSRAM. The text as prepared in advance is given in annex 7. Some ad-hoc remarks were added (annex 8), because of the written suggestion by DGIS, shortly before the meeting, that the services of ISM be put available to IBSRAM, as a "contribution in kind" for core activities.

I explained that ISM, or rather the future ISRIC, can be of service in several ways, notably through:

- the publication of technical papers in support of training of LDC soil scientists;
- the collation of criteria and approaches to soil classification as in use in different tropical countries, and the support to harmonizing this into an International Reference Base for soil classification;
- the acquisition and processing of information on soil geography and land use possibilities in the tropics, through expanding its programme of collecting and cataloguing small-scale soil maps and related thematic maps;
- the development of a soil data base for developing countries, comprising both representative soil profiles and essentials of small-scale soil mapping units. This may lead ultimately to the computer storage of a generalized soil "map" for the LDC regions at scale 1:1 million, through a cooperative effort of several (inter)national institutions - with partial print-outs as needed;
- assistance to the assessment of soil-related land qualities in LDC regions;
- the expansion of the current pilot programme of inter-laboratory comparison of the reliability and usefulness of soil analysis methods and procedures for tropical soils.

The latter item received immediate response from several sides, including some potential donors (eg. USAID). I thereupon submitted a hand-written proposal to the new Board that a special SMN or Central Service be created for the purpose. It would include not only soil characterization criteria but also soil fertility testing (e.g. through cooperation ISM + other Dutch institutions with US laboratories of Lincoln and Raleigh)\*.

Several participants had suggested in private that ISRIC might just as well house IBSRAM headquarters, or at least the nursing period secretariat. I refrained however from openly mentioning such a possibility, bearing in mind that such would involve extra space and funds - which DGIS would neither be willing or able to provide, and which would unlikely to be funded by other donors (see III a.)

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\*A more modest proposal, concerning soil characterization-oriented lab data mainly, has already been submitted to DGIS/DPO-00 a few months ago.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

The IBSRAM proposal was accepted in principle, and an embryonal organizational structure was formed at the Townsville meeting. Funds for its originally proposed core activities are however very meagre for the time being, and the various submitted Soil Management Units/Networks will need to be much better defined and presented before substantial financial support will be committed.

Now that IBSRAM has been formed, like it or not, it is recommended:

- a) that DGIS and the DLO-institutions/LH Departments concerned take an active interest, so as to steer IBSRAM in the right direction. This may, in first instance, be realized through the appointment of a permanent representative in the donors support group for the Board (as meeting in Washington, end October '83, for the first time);
- b) that efforts be undertaken to ensure an active interest of the EEC in IBSRAM, e.g. through appointment of an EEC-connected agricultural economist on the Board;
- c) that the merits of the various proposed Soil Management Units/Networks be carefully considered, also with respect to their relevance to ongoing DGIS-supported research and development projects in soil-related fields\*;
- d) that current Dutch efforts on subjects that are also planned as central services of IBSRAM, now or in the future, be coordinated with IBSRAM as much as possible\*\*;
- e) that a discussion be started on which of ISM/ISRIC's functions can and should be utilized in the framework of IBSRAM, including the financial/organizational implications thereof.

Wageningen, 27 September 1983

(W.G. Sombroek)

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\* Examples are: the wetlands development of IITA - ILRI c.s., and DLO's Acid Sulphate Soils Research group; the crusting semi-arid soils development programme of ICRISAT's Niamey centre - LH Soil Tillage Department; the land clearing and post-clearing management research programme of IITA - Stiboka/ISM proposal, the acid tropical soils management programme of LH/CELOS, KIT's shifting cultivation monitoring studies, and IB-Haren's activities on P and N management in tropical farming systems.

\*\* e.g. in-country training in soil survey and land evaluation - Stiboka & ITC; information and documentation services - ISM & KIT; interlaboratory cooperation programmes - ISM a.o.

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May 25, 1983

Dear Dr. Manger-Cats,

I am pleased to send you a proposal for the establishment of an International Board for Soil Research and Management (IBSRAM). The proposal has been prepared by a steering committee of soil scientists, agriculturists and administrators from developed and developing countries, with the assistance of a consultant (Dr. R.B. Miller, former Director of the Soil Bureau and Chief Research Officer, Department of Scientific and Industrial Research, New Zealand), and with financial support from the Australian Development Assistance Bureau (ADAB), the German Agency for Technical Cooperation and Development (GTZ), the International Development Research Centre (IDRC) of Canada, and the Australian Centre for International Agricultural Research (ACIAR).

The proposal and future support for IBSRAM will be discussed at a meeting to be held at Townsville, northern Queensland, Australia, from September 12 to 16 of this year. An outline of the program for the meeting is also attached, and you should shortly receive a brochure giving more details about it from Dr. E.T. Craswell of the Australian Centre for International Agricultural Research (ACIAR).

The meeting is structured so that the first two days are devoted to the theme "Tackling Soil Constraints to Food Production in the Tropics", when the IBSRAM proposal will be presented and discussed. The remainder of the meeting will be devoted to a field excursion (to see a little of soils and agriculture in northern Queensland and Australian research concerned with their development and soil management), and a discussion of possible support from Australia to soil research in developing countries.

Should you require further information about the proposal, or the meeting in Townsville, I would be pleased to provide it.

We hope that your agency may be prepared to contribute to the core support for IBSRAM, or to a Soil Management Unit, and will be represented at

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Dr. Ir. S.G. Manger-Cats

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May 25, 1983

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the Townsville meeting when these matters will be discussed further.

Yours sincerely,

D.J. Greenland and A.R. Van Wambeke  
Joint Chairmen  
(on behalf of IBSRAM Interim Committee)

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Copy to Dr. E.T. Craswell, Dr. W. van Vuure

# IBSRAM

## REMOVING SOIL CONSTRAINTS TO FOOD PRODUCTION

### A PROPOSAL

## A Proposal

This pamphlet describes a proposed International Board for Soil Research and Management (IBSRAM), the reasons it is needed, and the manner in which it will function. The idea for such a body arose more than a decade ago and was based on the need for developing country institutions to come to grips with the constraints on food production due to adverse soil conditions. The Consultative Group for International Agricultural Research (CGIAR) and aid agencies recognized this need throughout the 1970s, and at a 1979 meeting in the Philippines 75 participants from 29 countries formulated the basic objectives and structure of IBSRAM, and appointed an Interim Committee. In 1981 and 1982 funds to develop a firm proposal were obtained from the Australian Development Assistance Bureau, the Australian Centre for International Agricultural Research, the German Agency for Technical Cooperation, and Canada's International Development Research Centre. An outline of the proposal follows.

## The Need

By the end of the century, an additional two billion people will be living on the earth. Ways must be found to feed them, and to ensure that the ability of the soil to sustain food production in the future is not impaired.

Even now, farmers cannot produce the quality and quantity of crops genetically possible. The soils of the tropical world lack the fertility necessary to produce the potential yields. Furthermore, soils in many areas are already rapidly deteriorating as a result of desert extension from overgrazing, topsoil loss from erosion, cities encroaching on cropland, salinization and waterlogging, intensive cropping, and nutrient depletion in densely populated areas. To these constraints must be added the production constraints imposed by the inadequacies of institutions required to deal with such problems.

Therefore there is an urgent need to improve and protect the resource upon which mankind's future depends so directly: the soil. Although many organizations have been established to develop methods to use soil more productively, none has the overall authority to coordinate and apply research on the management, conservation, characterization and classification of soil and land resources worldwide. The diversity of soil makes it necessary for research activities to be conducted in many locations. Responsibility for such

activities must rest with national agricultural research and development organizations, which can be greatly strengthened by assistance from international organizations and from research institutions in developed countries. Coordination will be needed between the many bodies involved. IBSRAM has been proposed to provide that coordination.

## The Concept

IBSRAM is proposed as an organization to ensure that existing soil information and newly developed technology can be adapted by national country programs, and that gains in the genetic potential of food crops can be more fully realized on the wide diversity of soils found around the world. Specifically, IBSRAM will:

- disseminate present knowledge on soil use;
- see that research is undertaken to create new knowledge and apply it to increase food production on a stable, continuing basis; and
- help ensure the availability of trained soils personnel in all countries.

IBSRAM is visualized as a small core of headquarters staff with information and training divisions supporting action programs in soil management research institutions around the world. The proposed organization will meet the need for soil research to be done where the problems exist, for local institution building and on-site training, and for economy in administration. It will bring together national soil research leaders and scientists from international organizations and developed country institutions in networks, which will enable well-planned, multidisciplinary work to be conducted and the results shared through cooperation within and between countries and between national and international groups. IBSRAM will not itself undertake training and research, but will promote those activities, in a manner similar to that used by the International Board for Plant Genetic Resources (IBPGR) to help conserve the world's germplasm of important food crops.

## Objectives

IBSRAM's general aim is to help ensure that the soils of the world will produce the food needed by today's population and by the additional population to be fed in the years ahead. In pursuit of this aim, IBSRAM will have the following objectives:

- To identify soil research priorities and promote action on urgently needed research
- To promote national research and management programs by coordinating activities of national and international agricultural research centers. Collaborative programs will be established to remove constraints to crop production and to apply research results to soil management and use.
- To promote or initiate training activities to provide qualified people at all levels in all countries to serve soil research, soil management, soil characterization, soil conservation, and extension services
- To develop and implement data systems containing information on soil management, conservation, characterization and classification in relation to crop performance.
- To stimulate the application of soil and soil-related knowledge by transferring scientific and technological information between areas with similar environmental conditions.
- To promote soil and water conservation research and its application in the interest of more rational, productive, and sustained land use.
- To promote development of farm management-oriented research methods aimed at removing soil constraints and maintaining or improving soil fertility, taking socioeconomic conditions into account.
- To stimulate tropical soil characterization and classification and studies of soil-land characteristics in relation to crop production, and to link soil survey organizations with those involved in soil fertility and crop production research.
- To support and help implement the World Soil Charter of the Food and Agriculture Organization of the United Nations (FAO) and the World Soil Policy of the United Nations Environment Program (UNEP).

## The Problem

During the past 20 years, the potential yields of major cereal crops have been greatly improved through plant breeding. Where new varieties have been introduced, together with good soil and water management, dramatic yield increases have been achieved. Yet many areas have been bypassed by the new technology, often because soils are unsuited to production of high-yielding crops. Management methods for attaining high, sustained yields on these soils have yet to be

developed, or where they have been developed, they have yet to be widely tested.

For example, Korea, with irrigated and well-fertilized rice, had a mean annual yield increase of 5.3% per annum between 1970 and 1978. Yet in Africa, where irrigated rice is unusual and shifting cultivation the norm, many countries have shown a steady yield decline, and the median rate of yield change for the region is zero. Declining soil fertility and increasing erosion associated with more intensive soil use undoubtedly contribute greatly to the decline of yields.

## The Program

### OPERATIONS

IBSRAM will identify the major soil problems and attack those of highest priority. Four examples are described below.

#### Tropical red soils

There are available maize varieties with the potential to produce two to three times current yields, given better soil management to control erosion and to supply needed crop nutrients. Research at the International Institute of Tropical Agriculture (IITA) in Nigeria has shown that maize yields of 5-6 tons per hectare can be maintained on Oxisols for at least 9 years, compared to 2-3 tons per hectare with traditional soil management. There are some 500 million hectares of similar Alfisols in the tropics, to which the IITA technology could be adapted. IBSRAM will assist in the dissemination and adaptation of that technology over a wide range of environments. The Oxisols and Ultisols of the tropics are even more extensive, but less intensively used, and, in shifting cultivation systems, generally produce yields of less than 1 ton per hectare of cereals and perhaps 3-5 tons per hectare of root crops at intervals of 10-20 years. Although less susceptible to erosion than Alfisols, Oxisols, and Ultisols are extremely acid and poor in most plant nutrients. Nevertheless, work in Brazil and Peru has shown that with careful management continuous production at satisfactory yield levels can be maintained. IBSRAM will promote the evaluation of that technology in other parts of Latin America, and in areas of Asia and Africa with similar soils.

#### Land clearing

A large percentage of undeveloped lands consists of forested areas on Alfisols, Ultisols, and Oxisols. These are currently being cleared by a variety of methods, many of them destruc-

tive to the land potential. Work at IITA and elsewhere has demonstrated how clearing can be done without impairing the soil's ability to sustain productivity. There are many areas in Amazonia, West and Central Africa, and Southeast Asia to which such research should be applied. IBSRAM will coordinate and support such work.

#### Wetlands

About half of the 150 million hectares where rice is grown is irrigated. The yield in those areas is dependent on fertilization, particularly nitrogen. Most irrigated rice in Asia is well fertilized and good yields are maintained. In the half of the rice lands that are not irrigated, however, many problems that exist relate to yield increase. For example, areas of eastern India and Bangladesh that are flooded each year by rivers originating in the Himalayas have extensive waterlogged soils. Even where flooding is not deep, it has not been possible to increase yields much beyond 1 ton per hectare. The soils are almost certainly toxic, but the precise cause of the low yields has not been adequately explained. Resolving this problem will be one of the tasks for which IBSRAM will mobilize support to assist the national programs, bringing together scientists from the national programs, the International Rice Research Institute, and research organizations in developed countries.

#### Tropical black clays

About 130 million hectares of heavy black clays (Vertisols) in the semiarid tropics, used mostly to produce sorghum or millet, give yields of less than 1 ton per hectare. Yet work at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in India has shown that the true potential of those soils using improved varieties with natural rainfall, is at least 3 tons per hectare. Such yields, furthermore, can be maintained with proper watershed management and careful land preparation. IBSRAM will promote feasibility studies of using such methods over wide areas in different countries.

#### TRAINING

There is a major need for additional training to provide the skilled staff needed to conduct the necessary applied and adaptive research in different countries. Training is needed at all levels, from field technicians to research project leaders, and in all areas of soils research, including soil management and agronomy, soil fertility, soil conservation, soil character-



ization, and soil engineering. Various training courses are operated by different institutions in developed and developing countries. A major effort is needed to ensure that these courses are accessible to those who need training, and that all are well informed of the type of training available and how well it meets the requirements of the national program. The Training Division of IBSRAM will determine the needs of the different countries for training in soil research and management and the opportunities available, and work to ensure that the necessary training is made available to all who need it.

#### INFORMATION STORAGE AND DISSEMINATION

No organization is currently responsible for the dissemination to developing countries of the considerable information being generated on soil use and management. Full-time specialists are required to ensure that what is available is accessible, which involves systematic collection, interpretation, and dissemination. A communication and publications service is needed to cover soil management, conservation, characterization, and classification, especially in relation to crop performance. These activities will be undertaken by IBSRAM.

## Organization and Budget

IBSRAM will function through its Board and Administration, and the Training, Information, and Operations staff.

#### THE BOARD

The Board is the executive and policy-making body with primary responsibility for IBSRAM. It will bring together the necessary technical resources from all parts of the world and make decisions on priorities regarding operations.

At full strength, it will have 10 members plus a chairman, each appointed for 3 years, with reappointment allowed for one additional term only. The members will include representatives from developing and developed countries, representatives of international institutions, and a representative from the host country in which the headquarters is located.

Ability to form linkages with institutions working in related fields will be considered when appointing members. Members will also represent disciplines related to soil research and management such as agriculture, economics, and management. The Director of IBSRAM will be an *ex-officio* Board member. The Board will usually meet once a

year, and, when necessary an Executive Committee of five members will be appointed to act for it between meetings.

#### ADMINISTRATION

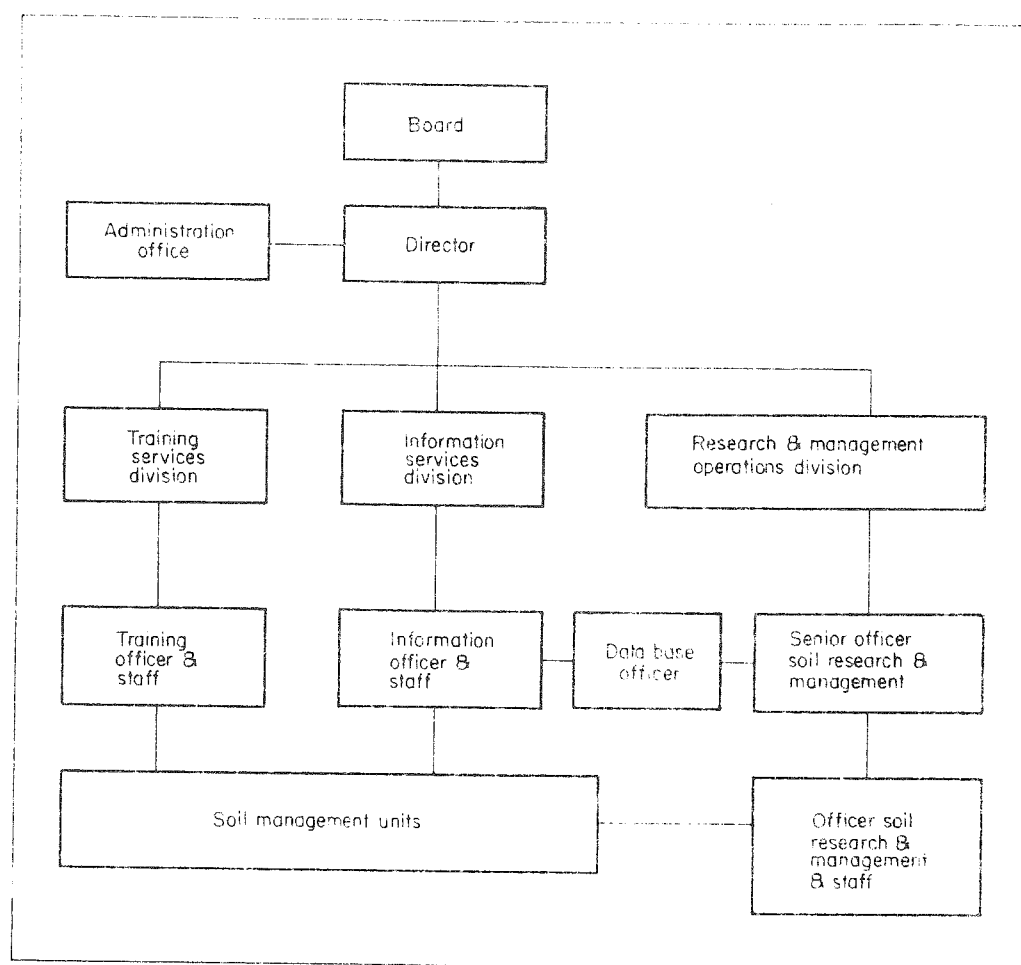
IBSRAM will have a relatively small central headquarters staff with operations spread widely around the world. The staff will serve the Board, administer finances, and generally organize operations. Specialist officers will manage training activities and the information center. Project management normally will be delegated to field officers working on either a project or a regional basis. An executing agency may be appointed for the initial period of IBSRAM's operations to administer funding and provide other support. As soon as possible IBSRAM should become independent, and eventually may aspire to become part of the CGIAR system.

#### OPERATIONS

IBSRAM's activities will be run through its training and information services and a series of Soil Management Units (SMUs) coordinated by IBSRAM's headquarters. Each SMU will be a separate entity, separately funded and administered. While there may be differences in operation among the SMUs, all will start with a proposal developed by IBSRAM staff working with the national and international organizations involved. A Working Group that meets regularly will plan the activities to be conducted by the national organizations and by others providing research support.

Each SMU will have a research base from which special knowledge of the particular soil and its problems will be available. A coordinator, who will liaise with an IBSRAM officer in planning and developing the project, will be stationed at the research base. Research bases may be located in one of the IARCs (as is the International Network on Soil Fertility and Fertilizer Evaluation for Rice at IRRI), at a developing country research center, or in a developed country research institution.

Through planned networks associated with the SMUs and contacts with international organizations and soil research institutions in developed countries, IBSRAM will be in a particularly strong position to determine what soil information is most needed to stimulate food production programs in developing countries. When the SMUs have been in operation for some time, they will generate much information of value to network countries and others. IBSRAM's information division will be responsible for publishing and disseminating that material.



### BUDGET

The startup date proposed for IBSRAM is October 1983 with a budget of \$190,000 estimated for the first year's operation. The budget is divided into Core (headquarters) and Operation (special projects) expenses. The Core component (\$90,000) covers staffing and Headquarters services, and the Operations part (\$100,000) the operation of SMUs. Information and Training expenses will be Core activities.

The accompanying table summarizes the budget for the first 5 years. These figures are indicative, and are included only to provide an idea of the possible cost of IBSRAM.

### The Challenge

The conclusion is clear. The needs are evident and urgent, the organization proposed is feasible and economical, and

Indicative budget summary, years 1-5.

	US\$ × 1000				
	1	2	3	4	5
Core budget					
Staff	0	255	425	690	690
Other expenses	90	155	175	260	260
Subtotal	90	410	600	950	950
Special Project Operations (SMUs) <sup>a</sup>					
Coordinating staff	0	140	180	180	180
All other expenses	100	1250	3000	5100	5100
Subtotal	100	1390	3180	5280	5280
Possible Capital Expenditure					
	250	220	170	300	400

<sup>a</sup>Soil management units.

the proposed method of operation is one that should be highly effective. The proposal allows for well-planned, action-oriented activities that promote strong cooperation between developing and developed country scientists, and between national and international organizations. The work will be directly applied to crop production on farmers' fields.

**Interim Committee to develop a Proposal  
for the establishment of an  
International Board for Soil Research and Management  
(IBSRAM)**

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International Rice Research Institute  
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Dr. R. A. D. Jones  
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Dr. R. J. Millington  
Commonwealth Scientific and Industrial Research Organization, Division  
of Water & Land Resources  
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Australia

Backed by the goodwill and direct assistance already evident around the world, IBSRAM is ideally suited to take up the challenge posed by present and future soil constraints to world food production in those areas where increased food production is most urgently needed.

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Dr. A. R. Van Wambeke  
(Cochairman)  
Department of Agronomy  
Cornell University  
Ithaca, New York 14853  
U.S.A.

March 1983.

# MINISTERIE VAN LANDBOUW EN VISSERIJ

DIRECTORAAT-GENERAAL LANDELIJKE GEBIEDEN EN KWALITEITSZORG

DIRECTIE LANDBOUWKUNDIG ONDERZOEK

Aan dr.ir. S.G. Manger Cats  
Ministerie van Buitenlandse Zaken  
DGIS/SMA  
Muzenstraat 20  
2511 VW DEN HAAG

dat:	6-7-83
no:	009.35
aan:	WJ
aan:	dr. I. B. van
aan:	

uw kenmerk :  
ons kenmerk: DLOW-3051 vv/al  
datum: 1983-07-01  
onderwerp: IBSRAM-voorstel

Zoals afgesproken bijgaand een kort verslag van een tweetal besprekingen van een op verzoek van het LAWOO samengestelde ad-hoc werkgroep over het voorstel voor de oprichting van een International Board for Soil Research and Management (IBSRAM).


Dit verslag kan hopelijk van nut zijn bij de beantwoording van de brief van 25 mei jl. van de heren Greenland en Van Wambeke.

Alhoewel er twijfel bestaat aan het nut van de voorgestelde Board, bestaat er bij de bodemkundige instellingen grote belangstelling voor het takenpakket en de uitvoering van projektactiviteiten in 'Soil Management Units'. Om die reden en de verwachting dat de IBSRAM opgericht zal worden, wordt het zeer gewenst geacht dat van Nederlandse zijde aan de Soil Workshop in Australië van 12 - 16 september a.s. wordt deelgenomen.

De heer dr.ir. W.G. Sombroek, directeur ISM, is desgevraagd bereid gevonden deze taak op zich te nemen. Een probleem vormt evenwel de financiering van een vliegbiljet, waarvoor hopelijk in overleg met u een oplossing kan worden gevonden. Het ISM is bereid de verblijfskosten voor haar rekening te nemen.

Met vriendelijke groet,

Directie Landbouwkundig Onderzoek

  
(ir. W. van Vuure)

cc: Centrale Coördinator LAWOO  
dr.ir. R. Brinkman  
dr.ir. P.E. Rijtema  
dr.ir. K.W. Smilde  
dr.ir. W.G. Sombroek  
drs. R.F. van de Weg

BUREAU WAGENINGEN, MANSHOLT LAAN 4, POSTBUS 59, 6700 AB WAGENINGEN  
TELEFOONNUMMER 08370-19145  
TELEX 75044 DLOWA

Bereikbaar met openbaar vervoer (buslijnen 83 en 84) vanaf station Ede Wageningen

Kort verslag besprekingen op 17 mei en 23 juni 1983 over het voorstel voor de oprichting van een International Board for Soil Research and Management (IBSRAM).

Aanwezig: dr.ir. R. Brinkman-LH, dr.ir. P.E. Rijkema-ICW, dr.ir. K.W. Smilja-IB, dr.ir. W.G. Sombroek-ISM, drs. R.F. van de Weg-STIBOKA en ir. W. van Vuure-DLO.

1. De groep is unaniem van mening dat op het gehele gebied van de bodemkunde het onderzoek op de internationale onderzoeksinstituten (IARC's) en op nationale instellingen in ontwikkelingslanden, beslist onvoldoende is. Hetzelfde geldt voor het agro-meteorologisch onderzoek.
2. Vraagtekens worden gezet bij de oprichting van de voorgestelde nieuwe Board. Dit zou pas zinvol kunnen zijn als er aanzienlijke financiële middelen beschikbaar zouden zijn om het onderzoek te stimuleren. In de huidige situatie met schaarse middelen zou het hoofdkwartier een naar verhouding groot deel voor zich opeisen, waardoor er voor de uitvoering van onderzoek slechts weinig geld zou overblijven.
3. Een zekere coördinatie van bodemkundige activiteiten wordt wel zinvol geacht. Dit kan echter ook gebeuren en vindt al plaats via speciale programma's, zoals het INSFER-netwerk van IRRI en de Wetlands van IITA. Opgepast moet worden dat de IBSRAM een dubbele besturing introduceert.
4. Algemeen wordt er wel positief gedacht over het voorgestelde takenpakket in het IBSRAM-voorstel, met name de uitvoering via het concept van "Soil Management Units" (SMU's). Van Nederlandse zijde zou deelgenomen kunnen worden aan projecten/activiteiten in enkele van de voorgestelde SMU's. Feitelijk gebeurt dit al in de Wetland-SMU, waartoe het Wetland-project van IITA gerekend kan worden en de activiteiten van Brinkman en Oldeman in IRRI-verband. Ook het katteklei-voorstel behoort hiertoe. Eveneens zou Nederland kunnen participeren in de rode en gele gronden, de Ultisols-Oxisols-SMU of Amazonia-SMU. Bij de laatste zou gedacht kunnen worden aan aansluiting bij reeds plaatsvindende activiteiten in Colombia en Peru. Het ISNAR is b.v. geïnteresseerd in een netwerk van onderzoekscentra in het Amazonegebied. Ook kan aan het Oostelijk-Amazone-gebied (Brazilië) gedacht worden waarbij aangesloten kan worden op ervaringen in Suriname (LH-project). De onderzoeksresultaten zouden ook in andere delen van de wereld (Centraal Afrika, Indonesië) gebruikt kunnen worden met overeen-



komstige agro-ecologische omstandigheden.

Overigens moet wel gelet worden op onnodige overlap en goede taakverdeling tussen de voorgestelde SMU's en koppeling van activiteiten binnen de SMU's.

5. Verwacht wordt dat de IBSRAM tijdens de geplande Soil Workshop in Townsville, Australië, van 12 - 16 september a.s. wel zal worden opgericht. Gezien de twijfels t.a.v. het nut van deze Board zou Nederland geen core-support aan IBSRAM moeten geven. Dit valt overigens van DGIS-zijde ook niet te verwachten om diverse redenen. Als IBSRAM toch tot stand komt, zou Nederland wel-zoals hiervoor opgemerkt - aan enkele projectactiviteiten in enkele SMU's kunnen meedoen, m.n. Wetlands en Rode en Lele Gronden (Ultisols/Oxisols en/of Amazonia).
6. Gezien de verwachte oprichting van IBSRAM kwam in de groep sterk naar voren dat het zeer gewenst zou zijn om een Nederlandse vertegenwoordiger naar de Soil Workshop in Townsville af te vaardigen. Hiervoor komt met name dr. Sombroek in aanmerking. Hij zou de bijeenkomst kunnen bijwonen zowel in zijn kwaliteiten als directeur ISM en Secretaris-Generaal van de International Society of Soil Science (ISSS). Ook zou hij tevens als Nederlands observer kunnen optreden. De mogelijke Nederlandse belangstelling voor participatie in enkele "Soil Management Units" zou naar vormen kunnen worden gebracht, onder verwijzing naar de activiteiten die al plaats vinden.
7. Probleem is dan nog de financiering van de reis naar Australië. Het ISM kan evt. uit eigen middelen zorgdragen voor de verblijfskosten. Voor de financiering van een vliegticket moet nog een oplossing worden gevonden. Mede gezien het belang dat DGIS hecht aan het land en water onderzoek, de identificatie van goede projecten en een betere afstemming van internationale activiteiten op dit gebied, zou DGIS gevraagd moeten worden de middelen voor het vliegbiljet beschikbaar te stellen.
8. Bij de beantwoording van de brief van Van Wambeke/Greenland door DGIS/SMA (Manger Cats) zouden een aantal van de genoemde punten 'meegenomen' kunnen worden.

W. van Vuure

30/6/83

# MINISTRY OF FOREIGN AFFAIRS

PLEIN 23 - THE HAGUE - TEL. 61 49 41

ANNEX 3

Dr.D.J. Greenland and Dr.A.R. van Wambeke  
Joint Chairmen IBSRAM Interim Committee  
c/o International Rice Research Institute  
P.O. Box 933  
Manila  
Philippines

Directorate General, International Cooperation

Date: August 26, 1983

NGO and Educational and Research  
Programmes Department

Ref. DPO/OT-226574/M

Subject: Soil Workshop, Townsville, Australia

With sincere apologies for the delay, I herewith would like to react to your letter of May 25th, 1983, addressed to Dr. Manger Cats.

I have taken notice of the proposal for the establishment of the International Board for Soil Research and Management (IBSRAM) with interest. In view of the fact that soil research both at the international and national level is insufficient and takes place in a uncoordinated way, I agree with you that some form of coordination of the various soil research activities, carried out in different parts of the world, will be useful. For this reason the Netherlands support the idea of setting up Soil Management Units.

In spite of supporting the idea, I regret to inform you that I am not in a position to provide core funding for IBSRAM. The reason for this is following.

Within my Program for Research and Technology preference is given to financing activities on a project-basis; institutional funding is limited to 25% of the Program's budget at most.

However, I am in principle prepared to consider the funding of specific project in some of the proposed SMU's. As a matter of fact, at present the Program for Research and Technology is providing funds for a wetland-SMU (with IITA).

With respect to a possible Netherlands representation at the Townsville meeting I am pleased to inform you that Dr.W. Sombroek (Director of the International Soil Museum and Secretary General of the International Society of Soil Science) - will -

# MINISTRY OF FOREIGN AFFAIRS

Ref: DPO/OT 226574/M


Date: August 26, 1983

Page -2-

will participate. I have requested him to offer the services of the International Soils Museum - within its present financial possibilities - as a contribution in kind of the Netherlands to IBSRAM, once it has been established. Dr. Sombroek has responded favourably to this request. Finally, I wish you a fruitful meeting at Townsville.

THE MINISTER FOR DEVELOPMENT COOPERATION  
For the Minister

Head Section for Research and  
Appropriate Technology



(K. Soels)

IBSRAM

ACIAR



# SOILS WORKSHOP

Townsville, Australia

12-16 September, 1983

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PROGRAM

INFORMATION  
PARTICIPANTS

# TACKLING SOIL CONSTRAINTS TO FOOD PRODUCTION IN THE TROPICS

Monday, 12 September

CHAIRMAN: D.J. Greenland

0900-0910	Welcome	R.J. Jones
0910-0940	Tackling soil constraints to be increased food production in the tropics - the problem. and the development of the IBSRAM concept.	C.F. Bentley
0940-1000	The needs of Africa	R.A.D. Jones (Proposed)
1000-1020	The needs of Asia	C.R. Panabokke
1020-1040	The needs of Latin America	A.R. Lopes
1040-1100	COFFEE	
1100-1130	The IBSRAM proposal	D.J. Greenland A.R. van Wambeke R.B. Miller
1130-1230	Discussion	
1230-1400	LUNCH	

## PRESENTATION AND DISCUSSION OF PROPOSED SOIL MANAGEMENT UNITS

1400-1430	For the highly acid tropical soils (Oxisols and Ultisols)	P.A. Sanchez
1430-1500	For land clearing and development	R. Lal
1500-1530	For tropical clays (Vertisols)	L.D. Swindale
1530-1550	COFFEE	
1550-1630	For arid lands in the Sahel	R. Fauck
1630-1700	For the wetlands	T. Woodhead
1700-1730	For the easily eroded and compacted soils (Alfisols)	R. Lal H.W. Scharpenseel



1730 Other proposals - these may be tabled at the meeting, and this period is reserved for their discussion. Suggestions have so far been received relating to:

Skeletal soils	S. Panichapong
Water management	S. Panichapong
Acid savannah lands	A.R. Lopes

1800-2000 Cocktail Party

Tuesday, 13 September

CHAIRMAN: A. Van Wambeke

0900-0940	The training component of IBSRAM	H. Eswaran
0940-1000	Discussion	
1000-1030	IDRC experience in the operation and management of international networks and information services	A.R. Ker
1030-1050	Discussion	
1050-1120	COFFEE	

ASSOCIATION OF IBSRAM WITH OTHER INTERNATIONAL ACTIVITIES

1120-1150	The FAO agro-ecological approach to soil research, and collaboration with IBSRAM	R. Dudal G. Higgins H. Brammer
1150-1220	The International Soil Museum, and its future activities	W. Sombroek
1220-1400	LUNCH	
1400-1430	IFDC and its activities in soil research	P.J. Stangel
1430-1500	ORSTOM and its soil research activities	A. Ruellan M. Latham
1500-1520	COFFEE	

Tuesday, 13 September (Contd.)

1520-1550	Soil Research and management activities supported by USAID	A.R. Bertrand
1550-1610	Linking soil and water management research	R.W. Cummings
1610-1720	General discussion	
1720-1730	Confirmation of IBSRAM Board Members	

Wednesday, 14 September

FIELD TRIP

RESEARCH TO RESOLVE SOME PROBLEMS OF SOILS IN THE TROPICS

Thursday, 15 September

CHAIRMAN: R.A.D. Jones

0830-0900	Introduction	E.T. Craswell
0900-0930	Soil taxonomic problems in the tropics and sub-tropics	R.F. Isbell
0930-1000	Discussants	H. Eswaran S. Panichapong
1000-1030	General discussion	Led by R.C. McDonald
1030-1100	COFFEE	
1100-1130	Loss of nutrient availability in acid soils of the humid tropics following clearing and cultivation	G.P. Gillman
1130-1200	Discussants	E. Pushparajah. P.A. Sanchez
1200-1230	General discussion	Led by D.G. Edwar
1230-1400	LUNCH	

CHAIRMAN: C.F. Bentley

1400-1430	Characterisation of the soil-climate constraints for predicting pasture production in the semi-arid tropics	J. Williams and M.E. Probert
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Thursday, 15 September (Contd.)

1430-1500	Discussants	S.M. Virmani, R. Fauck
1500-1530	General discussion	Led by J.S. Russ
1530-1600	COFFEE	
1600-1630	Soil problem with Vertisols with particular reference to surface soil conditions and water relations	D.F. Yule, G.D. Smith and K.J. Coughlan
1600-1700	Discussants	J. Venkataswarlu L.D. Swindale
1700-1730	General discussion	Led by J.P. Quirk

Friday, 16 September

CHAIRMAN: W.S. Goedert

0900-0930	Soil resources, demography and land use in Papua New Guinea - an example of steep land problems in the humid tropics	P. Bleeker, Gael Keig and J.R. McAlpine
0930-1000	Discussants	C. Valverde, R. Dudal
1000-1030	General discussion	Led by G.J. Blair
1030-1100	COFFEE	
1100-1130	Soil mechanical problems associated with the agricultural use of soils	E.L. Greacen and B.G. Richards
1130-1200	Discussants	C.R. Panabokke, T. Woodhead
1200-1230	General discussion	Led by K. Turner
1230-1400	LUNCH	

CHAIRMAN: J.R. McWilliam

1400-1700	Discussion on research opportunities for ACIAR	Led by C.R. Panabokke
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## INFORMATION

If you require assistance with travel reservations, sightseeing or any other matters please contact ERIC CRASWELL of ACIAR, or BETH STEWARD or PATRICIA TART of Australian Convention and Travel Services, who are helping to organise the workshop.

### WORKSHOP ARRANGEMENTS

The meeting will be held in the Barrier Room of the Townsville International Hotel. Details of times, speakers, etc., can be found in the attached program.

### COCKTAIL RECEPTION

A Welcome Cocktail Reception will be held at the Roof Top Pool Side, Townsville International Hotel, from 6.00 p.m. to 8.00 p.m. on Monday, 12 September.

### MAYORAL WELCOME

A Mayoral Welcome will be held in the Administration Building, Walker Street, Townsville at 5.30 p.m. on Tuesday, 13 September. The Administration Building is within easy walking distance of the Townsville International Hotel.

### FIELD TRIP

A field trip to the Tully/Innisfail area will be held on Wednesday 14 September. A coach will leave from the Townsville International Hotel at 7.30 a.m. and will return at approximately 7.30 p.m. Lunch will be provided. Please advise the registration desk if you will not be attending the field trip.

### MEALS

Morning and afternoon teas have been arranged with the hotel. Breakfast, lunch and dinner can be purchased at the hotel or in the many coffee lounges and restaurants in the nearby vicinity.

### SIGHTSEEING

Sightseeing tours are being arranged for Saturday 17 September. Please see Pat or Beth at the registration desk for details.

\* \* \*

- 6 -  
LIST OF PARTICIPANTS

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## Responses to IBSRAM Proposal

<u>Donor organizations</u>	<u>Remarks</u>
CIDA, Canada (Mr. Gerard Ouellette Chief, Agriculture Sector Natural Resources Division)	<p>"... The concept of organizing networks of scientists based on Soil Management Units (soil groups) in order to promote close cooperation and transfer of information between national and international institutions is quite acceptable to CIDA's agronomists. Therefore we are generally happy with the objectives of IBSRAM and the type of organization proposed."</p> <p>"... the door is not closed on providing bilateral funds to a specific country for research on a given Soil Management Unit."</p> <p>"... any further communication concerning IBSRAM will be appreciated."</p>
Rockefeller Foundation, USA (Mr. Gary H. Toenniessen Assistant Director Agricultural Sciences)	<p>"... We are pleased that this concept, which originated at an IRRRI conference, has been brought to the point where collaborative research will soon be initiated under IBSRAM's auspices."</p> <p>..."it may be that certain Soil Management Units will address topics relevant to our future African interest. We would therefore appreciate your keeping us informed concerning progress made at the Townsville meeting and of future IBSRAM initiatives in Africa..."</p>
Swiss Development Cooperation and Humanitarian Aid (Mr. R. Wilhelm Deputy Director)	<p>"In our view soil research and management should get more attention in international agricultural research. We therefore welcome the efforts for the establishment of the IBSRAM board."</p> <p>"We would appreciate to hear about its further development."</p>
IFAD, Italy (Mr. Abdelmuhsin M. Al-Sudeary President)	<p>"We ... found the proposal interesting and, indeed, it would develop a mechanism to address the important problems of managing tropical soils. Although the International Research System does recognise the constraints on management of tropical soils through its Farming Systems Research, much more research is needed if we are to enhance our ability to address the problems of soils in the tropics."</p> <p>"We would appreciate ... keep us fully informed on the development of your proposal."</p>

Donor organizations

Remarks

SAREC, Sweden  
(Mr. Bo Bengtsson  
Research Officer)

"... SAREC will be informed about the outcome of the workshop."

USAID  
(Dr. N.C. Brady  
Senior Assistant Administrator  
for Science & Technology)

"With regard to IBSRAM we need to be sure that it is: located in a developing country; a flexible instrument to accommodate ongoing bilateral programs; and not too heavy administratively..."

c/o Ministry of Foreign Affairs  
Dept. of International Economic  
& Social Development  
Norway

"We remain favorably inclined toward the IBSRAM concept provided the Administrative entity is kept small and has as its primary function coordination and facilitation of communications. We do not favor a major operational unit.

"... we would appreciate receiving information on the further development of this (IBSRAM) plan."

Other organizations

Remarks

IRAT, France  
(M. Christian Pieri  
Chef de la Division  
d'Agronomie  
on behalf of the Director)

"We are ... pretty conscious of the great interest of this new organisation which aims to stimulate and coordinate research and training on management, conservation, characterization and classification of soils."

"... the success of such project lies upon its actual ability in promoting (and not imposing) multidisciplinary work within a flexible network connecting national, regional and international organizations which have different commitments, objectives and facilities."

UNESCO, France  
(M. Fred Fournier  
Consultant  
Division des Sciences  
Écologiques)

"UNESCO views sympathetically the birth of a new International Board for Soil Research, but cannot at present at least be sure of how it will relate to it."

FAO, Italy  
(R. Dudal, Director  
Land & Water Dev. Div.)

"... we would be in a position to partially support SMUs which fit our own programme priorities."

National research scientists/  
administrators

Remarks

Dr. M. Amirul Islam  
Secretary  
Bangladesh Academy of Sciences  
Dacca  
(formerly Director, Bangladesh  
Rice Research Institute)

"I am sincerely hoping that very soon it should be possible to make a formal start of IBSRAM. I am just curious to know where the Headquarters of IBSRAM is likely to be located."

"We in Bangladesh will be glad, in whatever way possible, to contribute to the establishment and growth of IBSRAM and as a developing country to get necessary support to grow more food out of the limited soil and land resources beset with many problems."

Dr. A.K. Bandyopadhyay  
Officer-in-Charge  
Central Soil Salinity Research  
Institute  
West Bengal, India

"I am extremely happy to know that our desire to establish an international soil research and management board is going to be fulfilled by the end of 1983."

Dr. S.O. Keya  
Chairman, Dept. of Soil Science  
University of Nairobi  
Kenya

"As rightly stated the need for IBSRAM is overdue, the world community stands to benefit immensely."

"We look forward to cooperate with the organization ... The idea of small secretariat but using national institutions is a practical and relevant approach. When the programme takes off we shall be grateful to receive further information about IBSRAM ..."

Mr. Mohamed A. Ali  
Ministry of Agriculture  
Kassala, Sudan

"As a national of a country that belongs to the developing nations, I express my appreciation for what is being done to help us increase food production. When the time comes please rest assured that I will do my best to contribute towards the support and success of IBSRAM, and will pass the information to others in the area."

Dr. Choornpol Swasdiyakorn  
Secretary General  
National Research Council  
Bangkok, Thailand

"I would like to inform you that the Land Development Department, Ministry of Agriculture and Cooperatives will be the focal point of IBSRAM's activities in Thailand, and the National Research Council of Thailand will fully support its operations."

.../

National research scientists/  
administrators

Remarks

Dr. Matthew Drosdoff  
Professor of Soil Science  
Emeritus  
Cornell University  
U.S.A.

"The proposal is certainly a comprehensive one and should attract a positive response from a number of donor agencies. As one who was involved in the early discussions of IBSRAM, I have a continuing interest in its successful establishment."

Professor N. Ahmad  
Head, Dept. of Soil Science  
The University of West Indies  
Trinidad, W.I.

"I feel hopeful that with the groundwork which was done, the necessary funding will be obtained to properly establish IBSRAM. I would be prepared, indeed, to contribute to the work of the proposed organisation in any way I can."

DRAFT

7 June 1982

Dear

An interim committee has been working for over three years towards the establishment of "The International Board for Soils Research and Management". IBSRAM is to be an international agency to seek support for and to oversee the administration of increased resources for applied research on tropical soils as well as to increase the utilisation of existing results of soils research in the tropics both activities being for the specific purpose of increasing food production in the tropics, particularly for and by the more disadvantaged peoples in those regions.

The interim IBSRAM committee has received encouragement from some international donors and has been advised by them to proceed with the immediate establishment of a Board to be responsible for the agency. IBSRAM will co-operate and work closely with the International Agricultural Research Centres now supported by the Consultative Group on International Agricultural Research (the CGIAR). Indeed, the Technical Advisory Committee of the CGIAR is fully aware of the IBSRAM initiative and has been both helpful and encouraging to the interim IBSRAM committee. It is foreseen that when the full complement of the IBSRAM Board of eleven members is attained there will be individuals providing liaison with the CGIAR, the Food and Agriculture Organization (FAO), and the United Nations Environmental Program (UNEP). However, it is proposed to start IBSRAM with the initial appointment of only

five members in the first year, and therefore the agencies listed may not all be represented among the first Board appointees. It is expected that additional Board members will be appointed during the second and third years of IBSRAM's operation so as to attain the full Board of eleven persons.

A "Search Committee" has been established to obtain nominations for consideration for appointment to the Board of IBSRAM. The selection of the initial five Board members will be made at Townsville, Australia, in September 1983 after which the agency will operate under the Board established at that time.

You are invited to make a nomination or nominations of individual(s) for consideration for appointment to the Board of IBSRAM. Nominated individuals may be from developing or developed countries and should be persons with a deep interest in and considerable knowledge of tropical agriculture and soils. There will be a considerable work expectation of Board members as they will be asked to serve on committees of the Board and to be active in promoting and seeking support for IBSRAM. Each nomination should be accompanied by a one-page only biographical statement regarding the qualifications, employment and experience of the person. Those persons or agencies submitting nominations are requested to ascertain from the individual(s) being nominated that the nominee(s) is both able and willing to serve as an IBSRAM Board member if appointed - on the understanding that they will expect to devote time and effort to IBSRAM in addition to that needed for official meetings of the Board and its Committees.



You are invited to send any nomination(s) you wish to make to the Chairman of the Search Committee as follows:

Dr C.F. Bentley,  
IBSRAM Search Committee,  
13103 - 66 Avenue,  
Edmonton, Canada T6H 1Y6

Any nomination(s) you make should reach Dr Bentley not later than 1 August, 1983.

Your interest, co-operation and support will be appreciated.

Yours sincerely,

J.R. McWilliam  
on behalf of IBSRAM Search Committee  
C.R. Panabokke, Sri Lanka  
J.R. McWilliam and  
C.F. Bentley, Canada, Chairman

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The Director,  
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INTERNATIONAL RICE RESEARCH INSTITUTE

MANILA. PHILIPPINES

IBSRAM-ACIAR Soils Workshop, Townsville, Australia, 12 - 16 September 1983.

The International Soil Museum (ISM); past, present and future

by W.G. Sombroek, Director

The Past

The International Soil Museum (ISM) was founded in 1966 with the aim to assemble a collection of the world's main soils. Representative examples were to be studied, analysed, compared and evaluated.

The first ideas for such a centre were formulated in 1952. After supporting recommendations at the 7th and 8th International Congresses of Soil Science in 1960 and 1964, Unesco made the soil museum "a project within its activities in the field of earth sciences".

At Unesco's General Conference in 1964 the Netherlands was selected to establish the Centre. It would function in close cooperation with Unesco, FAO and the International Society of Soil Science (ISSS), and its activities would complement the Soil-Map-of-the-World Project of these organisations.

During the first years after its founding, the Centre functioned in Utrecht, in small make-shift premises. With Dr. F. van Baren, professor in tropical soils at Utrecht University, as its honorary director, the Centre concentrated on the collection of representative soils from a number of European countries. Through the kind cooperation of the respective national soil survey organisations, however, also sizeable collections were obtained from Australia, India, Thailand, and several African countries. Progress was rather slow, due to limited finances, lack of a suitable permanent building, and absence of a full-time director.

By 1976, however, construction of a permanent building in Wageningen had been completed. A Dutch Board of Administration had been formed, with as constituent members the Agricultural University of Wageningen (LH), the Dutch Directorate for Agricultural Research (DLO), and the International Institute for Aerial Survey and Earth Sciences (ITC). The latter institute had - and still has - the financial-administrative responsibility for the working funds and the permanent staff of ISM, which lacked a formal Foundation status of its own. To ensure adequate scientific output, an International Advisory Panel had been established with soil science representatives of all continents appointed on ad-hoc basis by Unesco, in consultation with FAO and ISSS. This Panel has now met four times (1967, 1972, 1979, 1983). In 1977 also a Dutch National Advisory Council was created, composed of

representatives of all Dutch institutions of soil-related research and education; it meets every year.

In 1978, several years after Prof. van Baren had deceased, a full-time director was appointed, a soil survey, classification and land-evaluation specialist with experience in technical assistance projects in Latin America and Africa. The Wageningen premises were officially opened in 1979 by Dr. R. Batisse of Unesco. By then, about 350 soils, mainly from Europe, Africa and Asia, had been collected, analysed and conserved in the form of soil monoliths. A selection of these soils was put on permanent display in the exhibition hall ("pedonarium") of the Centre. In the years since, attention has shifted more and more to soils of developing countries, and more emphasis was put on the practical use of the data and materials gathered.

### The present

The permanent staff of ISM now consists of 13 persons, of which 4 are of university level. The average actual staffing is however about 20, because of the presence of temporary staff and visiting scientists, for periods varying from 3 months to several years.

The annual budget of the Centre is composed of about Dfl. 1 million (US \$ 350,000) for salaries, and Dfl. 300,000 for working funds. More than half of the latter has to be spent on fixed cost, leaving only about US \$ 50,000 per year for programme execution. In addition, about US \$ 40,000 per year is obtained on project basis. As yet, nearly all of these funds are supplied by the Dutch Directorate for International Technical Cooperation (DGIS), channeled through the Ministry of Education and Science and ITC. Efforts to effectively internationalise the funding - and thereby the staffing - are only recently likely to yield significant results.

The ISM building is located very centrally in Wageningen, sideways from the International Agricultural Centre (IAC) with its ample meeting and boarding facilities. The space available in the building comprises about 1000 m<sup>2</sup>, and consists of an exhibition hall, a lecture and meeting room, a workshop, a store, a well-equipped soils laboratory, a library, a microscopy room, a dark room and 12 office rooms. Already now there is an acute shortage of space of 250 m<sup>2</sup> (for storage, office rooms for visiting scientists, drawing room, library expansion, etc.) and this is expected to grow to about 500 m<sup>2</sup> in a few years time.



The present programme and activities are as follows:

(i) to collect, analyse and display representative sample material of all major soils of the world.

This is the core task of ISM, from which all other activities derive. About 550 soil monoliths have now been prepared, with their documentation in varying degree of completeness. This year, field collection work is centred in the People's Republic of China, Indonesia, Sri Lanka, Pakistan, Kenya, Moçambique, Uruguay and the USA, always in close cooperation with the national soil survey/research institution concerned.

(ii) to be host to soil scientists who want to study the collection for comparison and correlation with their own soils.

One-day visitors, experienced soil scientists and students alike, number about 1600 per year. Guest researchers average 3 or 4 at a time.

(iii) to issue publications on the collected material and soil science topics of interest, for distribution to national soil survey organisations, university departments etc.

ISM has a series Technical Papers (6 published as yet), a series Soil Monolith Papers (3 issued, 4 in preparation), and an embryonal series ISM Monographs (1 issued, 1 in preparation). It also publishes an Annual Report, always with a few short articles on items of current interest. All publications are as yet in the English language, but French and Spanish can be accommodated.

(iv) to assist in establishing national soil reference collections in developing countries; for research, land use planning, teaching, extension etc.

This is carried out mainly through the organisation of a short annual training course, which is effectively supported by Unesco through the granting of fellowships for developing country soil scientists. For the time being, about six participants can be accommodated each year.

(v) to build up a systematic documentation of soil maps, technical reports, soil-related thematic maps and land suitability data, especially from developing countries.

Acquisition work concentrates on generalised and smaller-scale soil maps (1:250.000). This material, now containing about 6000 items, serves as supporting documentation for the soil reference collection, but is also available for any updating of the FAO-Unesco Soil Map of the World, and any international effort

to arrive at a computerised soil map of 1:1 million scale. It can also be used for direct application to country-level agricultural development planning.

(vi) to study and correlate soil classification systems that have an international reach, and to assist in the elaboration of an International Reference Base for soil classification (IRB), a cooperative project of ISSS, UNEP, FAO and Unesco starting this year.

Copies of all classification systems, and of their diagnostic criteria, are collected and abstracted or translated when thought useful. It is also tried to have examples of outstanding units of these systems in the reference collection of soil monoliths.

(vii) To compare methods and procedures of soil laboratory analysis, for soil classification purposes in first instance, accompanied by an exchange of standard sample material of selected tropical soils.

The current pilot programme on this aspect (Labex), encompasses twenty major laboratories in both developing and industrialised countries. First results indicate a strong need for more accuracy and precision, through further standardisation of the detailed procedures, if not actual change of methods.

(viii) to study and collect soils under their natural vegetation, and to assess the changes taking place under agricultural occupation.

This programme item is carried out through a backstopping function of the Centre at the work of three young soil scientists of Unesco's Division of Ecological Sciences, who are dealing with soil studies in MAB biosphere reserves and - sites of Latin America, Africa and Asia.

It should also be mentioned that ISM's library, though relatively small, has a nearly complete range of recent books of all branches of soil science and its applications. This because since many years one of its staff members is the book review editor of the sixmonthly ISSS Bulletin - with complimentary copies of about 100 books per year in different languages as a fringe benefit.

### The future

It is to be expected that the collection of soil monoliths will be complete when counting about 1000-1500 examples representative of both the variation in characteristics and properties of the world's soils, and their geographic distribution. This figure may be reached in 5 to 10 years hence, depending on the

degree of extra funding. Even though the detailed documentation on the collection may take more time, already now the application aspect should be given ample attention.

This is one of the reasons why it was recently agreed by ISM's International Advisory Panel - and supported by all international and national agencies concerned - to change the name of the centre. The word "museum" is too restrictive and not sufficiently connotative for the dynamic character of its activities. Per January 1st, 1984, the name will be "International Soil Reference and Information Centre (ISRIC), a centre for collection and study of soil reference materials".

A move is also underway to establish a formal Foundation with that name, the Board of which is likely to include some representatives of international organisations.

In the coming years attention is likely to be geared towards the following:  
(i) increase in the support for the establishment or improvement of national soil reference collections in developing countries.

It is hoped that funding for this purpose can be obtained from Unesco and UNEP, on project basis.

(ii) strengthening of the publication programme, covering not only results of research by own staff and visiting scientists, but also technical papers that are thought to be useful for the advancement of soil science and its applications in developing countries.

A contract with a Publishing House may be required for this.

(iii) expansion of the Labex programme of inter-laboratory comparison of the usefulness of soil analyses methods and procedures.

This may be funded, in part, from extra Dutch Technical Assistance funds.

(vi) active acquisition of small-scale soil map material, and computerising of the map catalogue.

A request for supporting funds has been submitted to the EEC. It is expected that close cooperation will develop with an EEC Technical Documentation Centre for agricultural development of the Lomé-convention countries, to have its headquarters established in Wageningen still this year.

(v) developing a computerised soil data base, not only for all actually collected

soil profiles, but also for well-documented profiles recorded in soil survey reports, excursion guides of technical meetings, etc. ("pedon data file").

Complementary to this would be a computerised file on recent small-scale soil maps, recording all elements of mapping units (composition of the soil association or - complex, topography, climatic characteristics, vegetation and land use, geographic pattern etc.) in an easily accessible way ("small-scale mapping units file").

Several national or regional systems of computerised storage of soil resources information are already in function or under consideration (USA, Brazil, Australia, Canada, CIAT, UNEP-GEMS etc.). The role ISRIC may play is one of catalysing, comparison and participation, making sure that its own activities in this field are as much compatible as possible with systems elsewhere. This will however require substantial additional funding, for staffing, space and specialised equipment, at the Centre or elsewhere.

(vi) developing of a methodology for a semiquantitative assessment of the soil-related land qualities, per individual soil profile, per soil classification unit and per small-scale soil mapping unit - as attributes in the rating of the land productivity and the limitations for the growing of individual crops.

In particular the latter two items will call for close cooperation with FAO, the CGIAR institutes, and the IBSRAM entity likely to be established at this meeting. In general, I may state that the data and the facilities of LSM/ISRIC are at the disposition of IBSRAM, to be used for better tackling of soil-related constraints to agricultural development in the tropics and subtropics, while safeguarding the quality of the soil component in fragile ecosystems.

#### Address

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Supplement talk Sombroek on ISM/ISRIC at Townsville meeting. Sept. 83

In addition to the written text, I should like to make a few ad-hoc remarks:

The Dutch Directorate for Technical Cooperation (DGIS) has stated in a letter to the convenors of this meeting that it is in principle prepared to consider the funding of specific projects in some of the proposed SMU's, but that it is not in a position to provide core funding for IBSRAM.

It also says that it is requesting me to offer the services of the International Soil Museum - within its present financial possibilities - as a contribution in kind to IBSRAM, once it has been established.

I am personally favourably inclined to this request, but such an offer needs the approval of my Governing Board in first instance. It also should be evident from my presentation, especially the part dealing with the history of ISM, that the Centre is not an institutional body of DGIS - although nearly all the present-day funds originate from that source.

If anything, then ISM may be said to be the intellectual property of ISSS, and the legal/historic property of Unesco's Earth Sciences Division. Their opinions are expressed through ISM's International Advisory Panel, which in fact met only a few months ago (and some of the members are present here). The possible linkage of ISM with IBSRAM was treated only marginally at that meeting, but I have the impression that this very recent DGIS-suggestion would have met favourable response from that quarter; however, with some reservations: it would be somewhat premature to offer ISM, or rather ISRIC, lock, stock and barrel; first it needs to be strengthened in its own essential functions.

Therefore, you may for the moment count with a provisional offer of the disposition of only a part of ISRIC's services for the objectives of IBSRAM.

So, what are the kind of services that you would want from ISRIC, now and in the future? One rather obvious one would be a linkage with the Information Storage and Dissemination programme of IBSRAM (I noticed that the staffing for that Division is foreseen only from end 1986 onwards). Another would be the expanded interlaboratory cross-checking programme, as already suggested by Dr. Valverde. Maybe also cooperation in the production of manuals, and technical papers is feasible.