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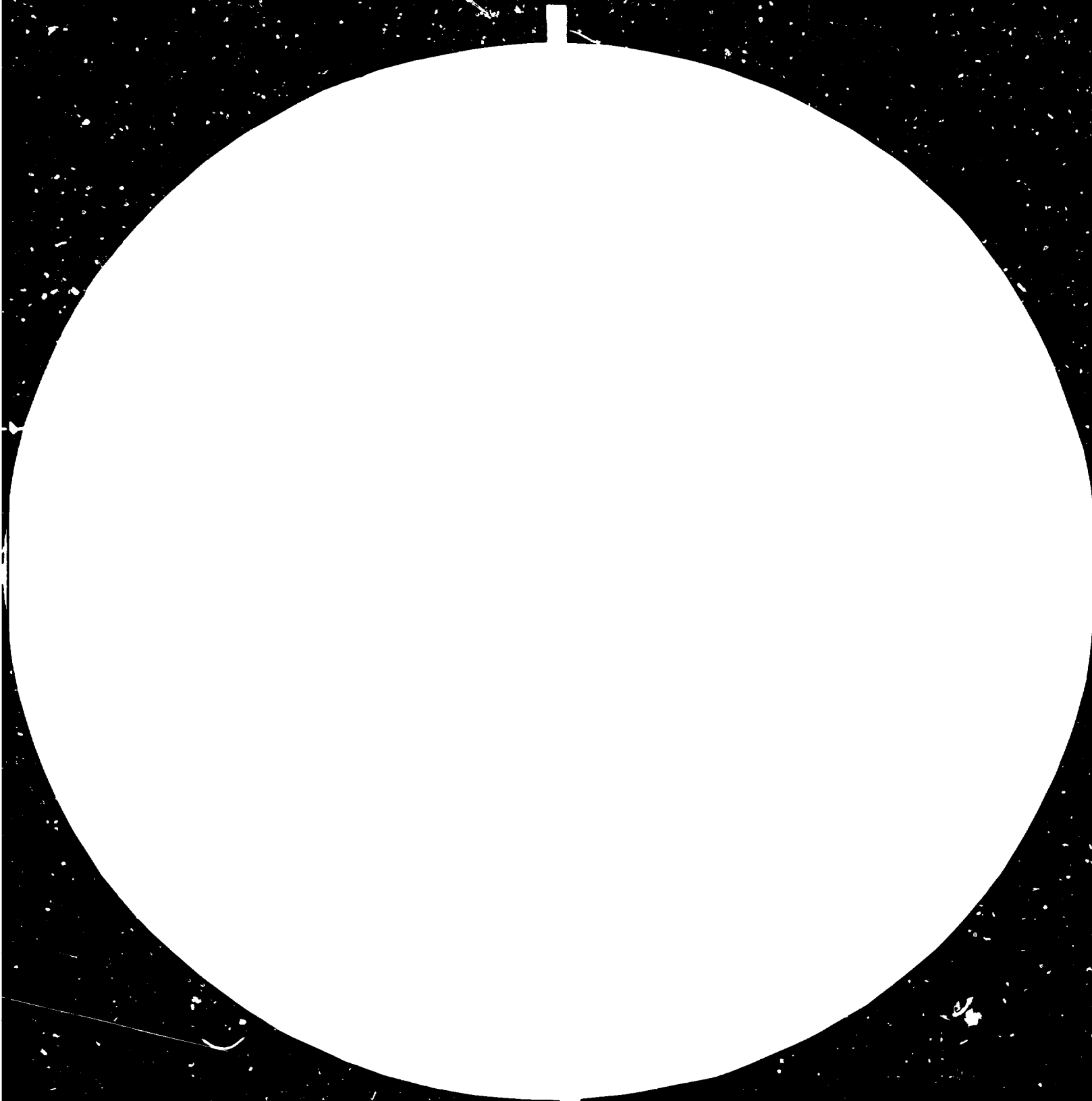
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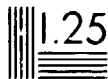
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High-level Meeting on the Establishment of the
International Centre for Genetic Engineering
and Biotechnology

Belgrade, Yugoslavia, 13-17 December 1982

REPORT*

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INTRODUCTION

1. The High-Level Meeting on the Establishment of the International Centre for Genetic Engineering and Biotechnology (ICGEB), convened jointly by the Government of Yugoslavia and the UNIDO Secretariat, met in Belgrade from 13-17 December 1982. Present were representatives from 28 countries, observers from 7 more countries, observers from 7 interested UN agencies and other international organizations, and one representative from industry (the list of participants is in Annex I).
2. Opening the meeting, Mr. Rade Pavlovic, President of Yugoslavia's Federal Committee for Energy and Industry, pointed out that biotechnology was creating a wholly new industry with comparatively small investments and as a result, offered prospects for the developing countries to become included in the process of technological transformation. He saw the establishment of an ICGEB as an important step towards broader and more comprehensive co-operation among developing countries. He referred to Yugoslavia's interest in obtaining and transferring technology in this field as well as in participating in co-operative programmes with the future ICGEB.
3. Mr. G.S. Gouri, Director of the Division for Industrial Studies, UNIDO, welcomed the participants. He referred to the steps taken by UNIDO in the last two years which led to the convening of the present meeting. These included the organizing of an Expert Group, which first met in February 1981, and the undertaking by that group of missions to 16 countries to ascertain the interest not only in undertaking national level activities but also in the proposed ICGEB as a mechanism of international co-operation. The findings of the Expert Group led it to issue a set of recommendations confirming the need for the creation of an International Centre. The Expert Group's report and recommendations were distributed to all interested countries and, in turn, evoked a widespread, positive response. It was against this background, and on the initiative of the Government of Yugoslavia and UNIDO, that the present meeting had been convened. Mr. Gouri stated that the process leading to the meeting involved a large number of developing and developed countries and was itself a tribute to international co-operation. The effort to establish the Centre was undertaken in the highest spirit of international co-operation to consciously and systematically endeavour that the benefits of modern science and technology reached out to all sections of humanity.

4. Professor Abdus Salam, Director of the International Centre for Theoretical Physics, stated that the 21st century would be the century of applied biology, particularly for the developing world. He therefore thought that the proposal to create an International Centre was timely and congratulated UNIDO on having taken the initiative to do so. Scientific transfer should go together with technology transfer, if technology transfer was to be meaningful and lasting. Only at international centres, such as the one proposed, could third world scientists engage in high level research and acquire techniques not otherwise available to them. Such a centre will give the developing countries opportunities to both learn advanced techniques and to make scientific contributions on equal terms with developed countries. The expenses involved in creating an international centre were very minor compared to defence expenditures or the amounts spent on scientific and technological development in several countries.

5. After the opening addresses, the Bureau of the Meeting was elected with Mr. Miljenko Zrelec (Yugoslavia) as Chairman; Mr. Ibrahim Badran (Egypt)^{1/} as Rapporteur; and Mr. Raymond Chretien (Canada), Mr. Didin Sastrapraja (Indonesia), Mr. Valentin Stepanov (USSR), Mr. Raimundo Villegas (Venezuela) and Mr. Zhu Yonghang (China) as Vice-Chairmen.

6. The provisional agenda (Annex III) was adopted with the addition of "other business" after item 10 on arrangements for the follow-up of the meeting.

7. Dr. Abd-El Rahman Khane, Executive Director of UNIDO, addressed the meeting on 15 December 1982. He stated that as far as the developing countries were concerned, the new technologies which were emerging, in the genetic engineering and biotechnology field, might well provide an important tool for them to move forward in their economic and social development in a manner suited to their own resources and conditions. If the right approach were adopted and concerted efforts made on the scale required, those new technologies could definitely open up large avenues for improving the quality of life for the whole of humanity, in particular the large masses in the developing countries.

8. Dr. Khane pointed out that industry was already feeling the initial impacts of genetic engineering and biotechnology but the greater impacts

^{1/} On 1/ December 1982, Mr. Teymour Sirry was authorized by Mr. Badran to act on his behalf.

were likely to be increasingly felt in the decades ahead. The speed as well as the pattern of industrialization, particularly in developing countries, could thus be substantially affected. If developing countries could utilize their bioresources more productively this would give them an additional important tool to accelerate their industrial development.

9. Dr. Khane also referred to the task of assisting developing countries. As in the case of some other new technologies on which it has embarked and developed concrete programmes, the UNIDO Secretariat has been increasingly impressed by the need for urgent action. Indeed, past experience indicated that establishing and/or strengthening skills in the developing countries, particularly in new technologies, require a much greater lead time than previously realized. It was therefore essential that the spirit of international co-operation should find concrete expression in terms of concerted and adequate action. Dr. Khane offered UNIDO's continuous interest in, and support of, the proposed International Centre.

10. Dr. Khane expressed UNIDO's gratitude to the Government of Yugoslavia which together with UNIDO took the initiative to organize the meeting.

I. THE ESTABLISHMENT OF THE INTERNATIONAL CENTRE

11. The delegations expressed their appreciation of the initiative of the Government of Yugoslavia and UNIDO in convening the meeting. All commended the UNIDO Secretariat for the great deal of work it undertook to prepare for the meeting and its timely and forward-looking promotion of the concept of an ICGEB.

12. There was general agreement on the importance of genetic engineering and biotechnology for development and on the need for international co-operation in assisting developing countries in this area. For this reason, delegations from many countries supported the establishment of an ICGEB primarily for the benefit of developing countries. Such a Centre would be an important means for developing countries to get into the mainstream of technological development in this area and to promote and accelerate the development of many sectors of their economies. The Centre would provide a forum of free access to developing countries to strengthen their technological capabilities. It was felt that the Centre would also be needed by small developed countries. Many delegations to the meeting expressed their wish to participate in the Centre and its activities. Such participation, it was stated, should be equally open to all countries.

13. A few delegations thought that the Centre was conceived on an ambitious scale and preferred a modest mechanism such as an international network. Many delegations, however, emphasized that only a Centre on the level envisaged in the UNIDO documents could provide a critical mass of expertise to be effective. It would also be a major force in catalysing national level activities and promoting specialized regional centres to perform biotechnology R+D in a manner suitable to the resources and needs of developing countries.

14. The activities of the Centre should not only be directed to research per se but also to increase the capabilities of national centres of developing countries by providing training for their scientists and technologists. The objective of the ICGEB would not be fully achieved unless the Centre could promote and interact with national centres and affiliated centres. Those centres would greatly benefit by their linkages with the International Centre which in turn would derive strength and an awareness of the needs of developing countries through such linkages.

15. The importance of establishing a Centre as a centre of high excellence was stressed by several delegations. In this connection, it was pointed out that the location where the Centre would be sited should have an adequate infrastructure and an attractive and stimulating environment in which experienced and creative scientists could work.

16. A number of delegations urged that the International Centre should as a matter of principle be located in a developing country since it was intended for the benefit of developing countries. Developing countries had greater needs and also greater opportunities for utilization of their research results in this area, and in addition had plenty of bio-resources. Were it not established in a developing country, the unique role of the International Centre might be easily lost, its orientation changed, and the benefits accruing to developing countries diminished. However, if adequate conditions including infrastructure needed to support the Centre were not available in a developing country, location in developed countries may be considered.

17. Several delegations gave full support to the creation of the International Centre on the understanding that within its framework, specialized centres would be created in countries or regions on request and as necessary. The conclusions reached in this regard are found below in Chapter V, 'Conclusions and Recommendations'.

18. The importance of training and the role of the Centre in this regard was stressed by many delegations. It was suggested that in view of the time needed for the Centre to become functional, the training component could be a starting point of action. The national centres would be strengthened considerably after their trained scientific and technical manpower returned to their laboratories. It was pointed out that besides training other functions of the proposed Centre were equally valuable. Some delegations suggested that as a starting point an international network or clearing-house should be created as an alternative to the creation of the Centre. Several other delegations, however, pointed out that networking would not be effective in the absence of an International Centre and national and regional centres. Since the International Centre had other important functions networking would not be a substitute for the Centre. A participant regarded the Centre as a foundation stone of a larger building of a network of regional and national institutions, especially in the developing countries.

19. Observers from the Food and Agriculture Organization of the United Nations (FAO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Environment Programme (UNEP) and the International Cell Research Organization (ICRO) described their existing activities in some of the fields of relevance to the Centre and expressed the desire of their organizations to co-operate closely with the proposed International Centre. It was also suggested that the potential existing in the MIRCEN's (Microbiological Resources Centres) network should be utilized by the Centre.

20. Following the discussions, the consensus of the meeting was that an International Centre for Genetic Engineering and Biotechnology should be established as a centre of high excellence. This conclusion is reported in Chapter V 'Conclusions and Recommendations'.

II. WORK PROGRAMME OF THE PROPOSED INTERNATIONAL CENTRE

21. The work programme in the document ID/WG.382/2 and its six addenda were presented by the UNIDO experts. It was noted that the programme covered genetic engineering as well as other advanced techniques in biotechnology.
22. It was generally agreed by the delegations that the distinguishing feature of the Centre, its rationale and its eventual success will depend on the work programme.
23. Several delegations considered the work programme presented in the documents acceptable while others stressed that such a programme should, besides striving to avoid obvious duplication, relate closely to national and regional level priorities and activities as well as activities promoted by international organizations. While elements of the work programme embodied mechanisms for linking Centre activities with national activities and ongoing regional and international work, those elements should be stressed more prominently in the overall work programme. Hence, in addition to the incorporation of such linkages in specific programme elements, other mechanisms should be thought of. These could take various forms. For example, the work programme could spell out as a specific responsibility of the Centre the systematic building up of linkages with national centres including assisting in the creation of such centres, and the promotion of regional centres and networks whether on a geographical basis or, perhaps more important, on the basis of distinct specializations.
24. The programme's main merit should be to enable the Centre to provide to national and regional institutions, carrying out research work with reference to their own problems and conditions, a point of open access to advanced techniques and high-level training. The Centre could also serve as a possible source of provision of vectors, restriction enzymes, etc.
25. There should be continuous and systematic efforts to identify the needs of developing countries and their scientific and technological priorities. The several important developments in biotechnology such as single cell protein production, enzyme engineering, microbial leaching, etc, should be kept in mind; others that might occur in future should be taken note of. These

considerations warranted that the programme should be kept flexible.

26. A work programme redesigned along the foregoing lines and permitting continuous interaction with national and regional activities would provide a sound basis for the work of the International Centre.

III. GUIDING PRINCIPLES OF THE STRUCTURE OF
THE INTERNATIONAL CENTRE

27. The meeting discussed the guiding principles of the structure of the International Centre as outlined in document ID/WG.382/1.
28. It was suggested that representatives to the Board of Governors should be carefully chosen by the respective countries so as to ensure the success of the Centre.
29. Since the Board of Governors was to represent all participating states and thereby would have many members, and since it was scheduled to meet only once per year, it was suggested it would be more practical to establish an Executive Committee. This Committee could meet more often between the meetings of the full Board and take decisions as needed.
30. It was generally agreed that the members of the Council of Scientific Advisers should be chosen from the scientific community outside the Centre. Members should be outstanding scientists and leaders in their field, preferably with some experience in management. In order that the needs and scientific priorities and concerns of different regions and developing countries be fully reflected, there should be a fair representation of scientists from developing countries in the Council, based either on a 50:50 formula or on the basis of an equitable geographical distribution. It was also suggested that representatives of the affiliated centres serve as members of the Council. Were this suggestion accepted, the Council might become a large body.
31. The question was also raised whether the Council should only consist of eminent scientists in genetic engineering and biotechnology. Perhaps it would benefit by including economists and planners experienced in the transfer of technology and policy formulation. Alternatively, the Board may wish to establish ad hoc advisory committees.
32. It was suggested that the Director of the Centre should be of the highest possible standing and command respect in the scientific field. In addition, he should possess the necessary human and managerial qualities to

run a multidisciplinary centre.

33. It was suggested that the Council be consulted when the scientific staff for the Centre were recruited instead of leaving the task entirely to the Director.

34. A participant suggested that instead of the Memorandum of Understanding having indefinite duration, a specific period, for example 10 years, could be fixed with the possibility of extension.

35. It was felt that the draft memorandum would require subsequent modifications in view of the conclusions reached by the meeting regarding affiliated centres. The memorandum should specifically provide for the establishment of such centres and should also spell out the relations between the International Centre and the affiliates.

36. It was felt in general that the guiding principles as outlined in document ID/WG.382/1 were broadly acceptable, though subject to the revisions necessitated by the concept of affiliated centres and other views expressed in the meeting. The memorandum shall be re-drafted to reflect the issues raised in the meeting and the conclusions reached. The decision of the meeting in this regard is found in Chapter V: "Conclusions and Recommendations", (para. 71).

IV. LOCATION OF THE INTERNATIONAL CENTRE

37. Delegations from Belgium, India, Thailand, Canada, Cuba and Pakistan made offers on behalf of their governments for hosting the International Centre^{2/}.

Belgium

38. The delegation of Belgium submitted to the Meeting an elaborate and extensive dossier which was prepared on the basis of the UNIDO's document IS/254. Two phases were envisaged: Phase one is to start activities very soon in already existing facilities, i.e. in the University of Louvain. The Belgian delegation said that it would be possible to start up the Centre in a month or two. Specifically, the Belgian offer includes:

First phase:

- 2.700 m² of already completed buildings equipped for offices, laboratories and workshops, and made available by the Catholic University of Louvain, located at the heart of the city of Louvain-la-Neuve.
- 5 to 10 scientists detached from the scientific community of the Walloon Region to commence ICGEB's research programme. Salaries will be supported by Belgian scientific institutions.
- "time-sharing" for ICGEB of the technical and organizational resources of the Catholic University of Louvain-la-Neuve including,
 - a computer centre
 - specialized libraries whose document collections will be centralized within the ICGEB
 - conference rooms with facilities for simultaneous translation

^{2/} Offers were first made to an informal meeting of the Bureau which reported them to the Plenary. The countries are listed in the order in which their participants appeared before the Bureau.

- janitorial and other up-keep
- the services of technical and administrative staffs who have had 10 years experience in setting up and managing 450,000 m² of university facilities
- specialized complementary equipment
- a complete technical and administrative team that will allow for the immediate normal functioning of the Centre and that will have the ability to support further temporary and permanent scientific staff of the Centre
- the necessary equipment to ensure the proper technical and administrative functioning of the Centre.
- a research grant of 50,000,000 BF, contributed by the Minister for New Technologies of the Walloon Government to finance co-operative research programmes between ICGEB and the scientific community of the Walloon Region
- one-year fellowships provided to researchers from developing countries so as to allow them to participate in training programmes of the ICGEB
- utilities for the occupied buildings during the first year.

If this proposal is accepted, the Walloon Government proposes to create a joint committee composed of representatives from UNIDO and itself. The aim of the committee will be to guarantee the successful start of Centre activities and to work out the practical details of this proposal.

Second phase:

The second phase will complete the contribution of the Walloon Government to the ICGEB. The exact details of this phase will vary according to the extent of the Centre's development.

This means:

- construction in the Scientific Research Park of Louvain-la-Neuve, of a 2,500 to 3,000 m² building including a pilot plant, complementary offices, laboratories and workshops. The total floor space will be in the order of 6,000 m².
- complementary equipment, including the pilot plant equipment, and those detailed in the report of a group of experts
- assigning of 5 to 10 scientists to the Centre from the scientific community of the Walloon Region for a complementary 4 year period. Salaries will be paid by that scientific community.
- a complete administrative team to be the nucleus of the Centre's staff
- annual training fellowships for researchers from developing countries.

The Region wishes that the Centre will develop so as to be freely accessible to the international scientific community. Furthermore, the Region wishes that 20 per cent of utilization time of the Centre's equipment be accessible to the Walloon Region's scientific community for research.

The overall contribution of the Walloon Government is estimated on a 5 year basis, in Belgian francs (50 BF = US \$ 1), to be, at a maximum:

476,500,000 BF (\$ 9,500,000)	for the equipment of the Centre
189,000,000 BF (\$ 3,800,000)	for the personnel of the Centre
25,000,000 BF (\$ 500,000)	for training inside ICGEB
50,000,000 BF (\$ 1,000,000)	for research conducted by the Centre
200,000,000 BF (\$ 4,000,000)	for buildings, land and utilities as acquired by the Walloon Government and its partners in this proposal.

The overall sum of 940,500,000 BF is approximately equivalent to US \$ 18,810,000.

39. The Belgian offer also held out the possibility of a future extension of facilities since the necessary land has already been bought.

40. The Belgian delegation explained their country's experience in international activities and training. For example, 15 per cent of the students at their universities are from developing countries. Belgium is ready to operate the Centre for the benefit of the developing countries in a way which will be decided by the Board of Governors and the Scientific Council once the Centre is established. The delegation also expressed their willingness to adjust their offer to accommodate some ideas which were mentioned in the plenary meeting, i.e. regional centres and networking.

41. Finally, the Belgian delegation pointed out that it would like to have certain guarantees concerning annual financing of the Centre's operational cost, i.e. by United Nations agencies, member states, international funds, etc., otherwise they will reconsider their offer. To cover operational costs, they expect international financing of approximately US \$ 7-8 million, as suggested by the UNIDO experts. This means that the Belgians will provide on the average US \$ 1-1,5 million per year for the first five years.

India

42. The delegation of India very strongly supported the idea of the creation of an ICGB, especially in a developing country. The Indian delegation gave extensive information about their country's potentials in research, and about general and specific areas of science and industry in India. They also described India's international activities, work in Indian universities, training, certain national institutions, and the National Biotechnology Board. The Indian delegation insisted that if the Centre will be established in a developing country, costs will be less than in a developed country, i.e. for local services, training and investment costs,

certain materials, etc. For an initial period of 5 years, India could provide local staff, scientists, technicians and clerical staff at its own cost.

43. In more precise terms, the offer of the Indian delegation is as follows:

- provision of land of the order $100 - 200 \times 10^3 \text{ m}^2$ for a campus, and a building for laboratories and offices of about $3,000 \text{ m}^2$ with air conditioning, water, power, furniture and other utilities
- provision of other buildings for housing, guest houses, international hostels, and facilities for visiting scientists and trainees. This would cost in excess of \$ 15 million
- provision of scientific equipment of the order of \$ 5 to 6 million
- additional contributions towards supporting staff, housing, hostels, etc. would in the initial five year period amount to \$ 7,5 million . Subsequent to the initial five year period, expenses would be estimated at not less than \$ 1 million per year
- the provision of temporary facilities in existing laboratories, for example at Jawaharlal Nehru University, for an initial period so that the Centre can quickly become operational.

44. At the time of the meeting, the Indian delegation had no specific proposal as to the site of the Centre, but there are several options.

Thailand

45. The delegation of Thailand described its national network of institutions with training facilities and the necessary infrastructure and basic utilities to support the establishment of an ICCEB. It also mentioned Thailand's

large international experience in scientific and technological exchange. Mahidol University offers the Centre a specific piece of land, at least 40.10^3 m^2 , for its exclusive use as building space. The site is located in a newly developed campus at Salaya, with a total area of about 3.10^6 m^2 and which contains many institutions of science and technology.

The new campus, situated 17 km from the centre of Bangkok, has facilities including 51 guest rooms, flats and houses. Other scientific facilities, including a computer centre, are available at a nearby sister campus.

The offer could not be financially expressed at present, but could include all the investment costs for land and buildings. The budget for the Centre's operating costs can be met to a certain extent, including local salaries. Definitive financial and other details will be offered at or before the ministerial meeting if the present meeting expresses serious interest in siting the International Centre in Thailand.

Canada

46. The delegation of Canada informed the meeting about the country's national research activities and stressed the importance of biotechnology to its domestic development. It also stressed the compatibility, between Canada's domestic priorities for biotechnology and those of the developing countries. It expressed the willingness to receive a visit of experts in Canada to see the various possibilities on the spot. The Canadian Governments' consideration of the possibility of hosting the Centre falls within the framework of its basic North/South policies, rather than its domestic economic development policies. The objectives of the Canadian delegation at this stage are to determine what the developing countries specifically want to have done in this field and to determine the feasibility of the UNIDO proposal meeting these needs. Initial estimation by Canada of costs of the International Centre including both capital and operating requirements for the first five years would amount to a total investment of US \$ 75-100 million. Several provinces of Canada expressed their interest to be the host of the Centre, namely:

- Alberta
- British Columbia

- Nova Scotia
- Ontario
- Quebec
- Saskatchewan.

Some of them made very generous offers, especially in the field of operational costs. Canada is very interested in possibly developing these interests within the context of the needs to be elaborated by the developing countries. Before final decisions are taken on a Canadian financial contribution to the ICGEB and on which Canadian location would be the host, the authorities must complete their internal consideration of the project. They are confident that a final decision by the Federal Government can be made before the forthcoming plenipotentiary meeting. Such a decision will be made on the basis of the results of the Belgrade meeting. The delegation expressed the wish that the evaluation team of outside experts review the choices of location available in Canada. The Canadian delegation indicated that its report to its Government will recommend support for the principle of regional (specialized) and affiliated centres in developing countries.

Cuba

47. The Cuban observer explained the various national efforts which have been made to develop research activities in his country, including the creation of a national research network. Cuba's offer mainly comprises land and approximately 75 per cent of the construction costs of buildings, excluding materials which are not produced in Cuba. Furthermore, equipment which is produced in Cuba will be provided and also payment of local personnel. The offer was not specified in financial terms. The site would be in Havana where most of Cuba's universities and scientific centres are concentrated.

Pakistan

48. The delegation of Pakistan pointed out that it expected only a general debate at this meeting and that as a follow-up, a sub-group or an expert committee would be established to evaluate and discuss the different offers before a final decision would be made. This is the reason why no financial terms are provided with Pakistan's proposal. The delegation

expected further funding from international resources, member states, etc. The delegation also reported generally on Pakistan's national potential, efforts to develop scientific research work and technology, and on its capability to host the ICGB. Possible locations are:

- Karachi: probably to be excluded because of its unfavourable climatic conditions;
- Islamabad: has the infrastructure needed for such a Centre and its climate is very pleasant;
- Lahore: contains one of the sub-continent's largest centres of education.

49. The Pakistani offer consists mainly of the following:

- provision of land for the International Centre
- provision of temporary facilities for an initial period in the existing laboratories of the Islamabad University, National Institute of Health, P.A.E.L. Medical Centre, existing University Grants Commission and the National Agricultural Research Centre nearing completion
- a new building will be constructed in two to three years
- all operational local expenses
- provision of facilities like housing, etc.
- Pakistan will provide local staff and services similar to other offers from developing countries, depending on its annual budgets but without financial commitments in foreign currency.

50. The decision of the meeting relating to the question of the location of the Centre is contained in Chapter V "Conclusions and Recommendations".

V. CONCLUSIONS AND RECOMMENDATIONS

51. A. Establishment of the Centre

- (i) There is an urgent need for broader and more effective international co-operation in the field of genetic engineering and biotechnology.
- (ii) International co-operation should be promoted in the first place for the benefit of the developing countries and for strengthening their scientific and technological capabilities and industrial development.
- (iii) An International Centre for Genetic Engineering and Biotechnology of high excellence should be established soonest possible with activities covering, inter alia, training, research, application and information, etc., taking into account the proposals in the UNIDO documents on these subjects.
- (iv) It is most desirable to set up such a Centre in a developing country provided that such a country can meet the conditions envisaged in the UNIDO reports and can provide an attractive environment for scientists.
- (v) Within the framework of the International Centre it is necessary to support activities of affiliated regional and/or national centres to be sited in different regions on a broad, geographical distribution. Financial support for these affiliated centres should be pursued through national and international financing schemes based on the advice of the ICGEB. Preparatory activities should be started as soon as possible to achieve this goal.
- (vi) There should be an emphasis on lower operational costs and a minimization of operational problems of the International Centre.

52. B. Affiliated Centres

The objective of the ICGEB to assist the developing countries in the field of genetic engineering and biotechnology in order to meet their specific needs will not be fully achieved unless the Centre can promote, and interact with, national centres and affiliated centres. Within the framework of the International Centre, the affiliated centres, each specializing in a specific subject area, will be located in different regions. There will be research laboratories designed to study and solve specific national and regional problems in their specified subject area. Existing institutions could be used as affiliated centres after being up-graded if necessary, and new centres will be created with the priority being given to developing countries. The host country is expected to be the main source of funding the affiliated centres. However, they should receive international support to undertake activities such as:

- (i) Finance visits by experts
- (ii) Fellowships for the training of the Centre's personnel
- (iii) Local fellowships (to train scientists from the region in the laboratories of the Centre)
- (iv) Special funding for research
- (v) Organization of regional courses and symposia
- (vi) Develop bioinformatics programmes
- (vii) Co-ordinated projects with other centres and with industry
- (viii) Process products resulting from research projects in the ICGEB.

53. Once the ICGEB is established, it should, through the mechanism of a consultative group of experts, immediately organize field visits and discussions with national and regional institutions in the participating countries. The missions would examine ways and means of assisting national-level centres and activities; identify several centres which could serve as specialized affiliated centres; define the scope, coverage and mechanisms of action; and submit a plan of action to the Board of Directors of the International Centre. The plan of action should detail the costs involved, the arrangements that the Centre should enter into with individual national and affiliated centres, and the respective roles of the International Centre and the affiliated centres in a given subject area.

C. Work of the Committee related to the location of the Centre

I. Plan of Action for the Selected Committee

54. A Selected Committee chosen by the meeting will prepare a full report based on information solicited from interested countries, from site visits and from discussions with potential host countries. The report will be submitted to the Ministerial-Level Meeting which is responsible for making the final decisions about selecting a host country and completing all the legal and other formalities for the establishment and early functioning of ICGEB.

55. The Selected Committee will consist of: a nominee of the Governments of China, Hungary, Indonesia, Mexico (in the event of Mexico not submitting a name - Argentina), Nigeria, Sweden and Yugoslavia and one expert selected by the UNIDO Secretariat from among the UNIDO experts at the meeting. UNIDO will act as a secretariat for the Selected Committee. The persons nominated by the Governments should be objective and of a high scientific standing with a broad vision and understanding of biotechnology and genetic engineering.

56. The Selected Committee may meet with the UNIDO experts in the course of its work to be more fully briefed on the background to the establishment of the ICGEB.

57. The UNIDO Secretariat will prepare a detailed questionnaire which will be sent before 31 December 1982 to candidate countries for completion and return on or before 20 February 1983.

58. The replies from the countries to the questionnaire, and any additional information provided, will be made available to the Selected Committee. The Selected Committee may have a short meeting to examine critically and analytically the data received. If needed, further information may be solicited from the countries.

59. After completing the preparation, discussion, analysis and review of information, the Selected Committee will start visiting the countries. The visits would be quite short in duration, intended by inspection and discussion on the spot to supplement and clarify the information already supplied.

60. The Selected Committee will prepare a detailed report of its findings including merits and demerits of the several locations offered from its point of view of realizing the objectives of the Centre.

61. The report shall be circulated two months before the date of the meeting to Governments participating in the Ministerial-Level Plenipotentiary Meeting. As necessary, additional clarification from candidate governments may be obtained by the UNIDO Secretariat. The Ministerial-Level Plenipotentiary Meeting will establish its own procedures for reaching a final decision about selecting the host country and entering into final negotiations for the operational requirements of the Centre.

II. Terms of Reference of the Selected Committee

62. (a) The mandate of the Selected Committee is within the framework of the consensus reached in the meeting.
- (b) The Selected Committee is required to seek additional information and examine in detail information from the host governments, UNIDO and other sources about the suitability and advisability of accepting the offers submitted.
- (c) For this purpose, it will examine the details of the offers received in regard to:
- (i) physical facilities, including the site and location;
 - (ii) scientific infrastructure and supporting services;
 - (iii) availability of scientific and technological and administrative personnel including language services;
 - (iv) finances and ability to attract membership and other sources of finances; and
 - (v) legal and other privileges to retain an international character.

- (d) The Selected Committee will visit the countries to ascertain all the details in (c) above and to acquire first-hand information about the submitted offers.
- (e) In order to assist the Ministerial-level Plenipotentiary Meeting to reach a decision, the Selected Committee will offer a critical and objective analysis on the merits and demerits of each case. Therefore, the Selected Committee will be advisory in character to the Ministerial-Level Plenipotentiary Meeting.

III. Structure of the Questionnaire to be sent to Potential Host Countries

63. The questionnaire should elicit information, inter alia, on the following:
- (a) Physical facilities; land, buildings, services, transport, communications, location, staff housing, guest houses, hostels, committee or conference facilities, telex, etc.
 - (b) Scientific infrastructure:
 - i. availability of short-term personnel and institutes to support programmes in ICGEB;
 - ii. research, library, computers, reproduction, testing, pilot plant and other auxiliary technical services.
 - (c) Personnel:

Availability of qualified short-term personnel and supporting technical, administrative and financial services, with particular reference to languages and experience and the support of high-level scientific and academic institutes.
 - (d) Financial support:

Following the tentative estimates of financial requirements of the Centre, the host Government will be invited to indicate in detail the contributions that will be offered towards construction of the Centre, staff salaries, research costs and operational costs, during the first 5 years and thereafter. The tentative programme of work, as contained in the documents for the meeting, may be used as an indicator of the level of activity and the other physical requirements. The potential host Government will be

invited to indicate its potential to attract membership to the Centre; highly qualified staff for research activities; and financial and other contributions from international and other resources.

- (e) Host agreements and privileges of the Centre will be established according to the legal set-up in the host country. The host country will be required to enter into a legally binding host agreement to ensure the international character of the Centre, the immunity of its staff and privileges for its operations. The host Government will be required to indicate its readiness to offer such privileges and status to the Centre.

D. Further Offers

64. It was decided that in addition to Belgium, Canada, Cuba, India, Pakistan and Thailand, the Government of any country which wishes to offer host facilities for the ICGEB should accordingly inform the UNIDO Secretariat in writing before 31 December 1982 and ask for the questionnaire. The questionnaire together with a concrete offer should be completed and returned to the UNIDO Secretariat on or before 20 February 1983.

65. Delegations from Brazil and Italy indicated their desire to receive the questionnaire. It was agreed that copies of the questionnaire will be sent to them and offers to host the Centre, if any, should be submitted to the UNIDO Secretariat along with the completed questionnaire before 20 February 1983.

E. Ministerial-Level Plenipotentiary Meeting

66. It was decided that a ministerial-level plenipotentiary meeting will be held from 13-19 July 1983. This meeting will be in two parts: the first part is to be a high-level meeting to resolve outstanding issues and the second part to be a ministerial-level meeting, with the ministers empowered by the respective countries to act in a plenipotentiary capacity, to agree on and subscribe to the final act of establishing the ICGEB. The first part of the meeting will be held from 13 to 15 July 1983 and the second part, namely the ministerial-level plenipotentiary meeting, on 18 and 19 July 1983.

67. The provisional agenda of the meeting will be as follows:

- (i) Opening of the Meeting.
- (ii) Election of Chairman and Officers of the Bureau.
- (iii) Adoption of Agenda.
- (iv) Consideration of the report of the Selected Committee.
- (v) Location of the International Centre.
- (vi) Financial Contributions to the Centre.
- (vii) Statutes of the International Centre.
- (viii) Adoption of the Declaration.
- (ix) Conclusion of the Meeting.

68. The delegation of Spain offered, subject to confirmation by its Government, to host the Ministerial-level Plenipotentiary Meeting at Madrid or another place in Spain.

69. The delegation of Canada stated that it dissociated itself from the consensus reached in regard to the holding of the meeting in two parts, as indicated in paragraph 66 above, because of the lack of authorization.

F. Other Matters

70. The UNIDO Secretariat was requested to convene the ministerial-level plenipotentiary meeting and take all necessary preparatory action including the securing of necessary financial resources for this purpose.

71. It was decided that further work on the draft statutes of the ICCEB to be submitted to the Ministerial-level Plenipotentiary Meeting should be carried out by the UNIDO Secretariat. UNIDO shall bear in mind the discussions held during the Belgrade meeting and take into account the results of informal consultations with interested Permanent Representatives to UNIDO.

72. The UNIDO Secretariat was requested to contact, according to its procedure, potential funding sources in order to assist in the securing of resources for the establishment of the Centre and its operation.

73. It was agreed that if countries other than those which participated in the Belgrade meeting, wished to participate in the Centre, the UNIDO Secretariat should include them in future activities.

74. The observer from the United Kingdom stated that he could not exclude ways in which his country might co-operate with the ICGB and expressed the wish of his Government to be fully associated, like other participating countries, in further work.

75. The delegations of Nigeria and Venezuela expressed the desire of their countries to be considered as sites for affiliated centres of the ICGB.

76. The delegation of Belgium stated that since the meeting had not decided on the specific and detailed offer made by it, it would have to refer to its Government as to whether that offer would be maintained in future.

77. The delegation from Sweden expressed the strong interest of its Government that the activities of the ICGB be particularly designed for the benefit of the developing countries, especially to the least developed countries. It associated itself with the conclusion of the meeting that it was most desirable to set up the Centre in a developing country provided the conditions set forth in the UNIDO documents were met. Its Government had a positive attitude to the Centre and would like the Selected Committee and the UNIDO Secretariat to visit Sweden in order to discuss further details of its possible contribution. It also stated that its Government would like to see the Biomedical Centre in Uppsala become affiliated to the International Centre.

78. The observer from Cetus Corporation, USA, stated in writing that the proposal for the establishment of the ICGB, as set forth in the report of the Group of Experts, was fundamentally sound and that industry strongly endorsed the establishment of the Centre. He stressed the importance of the Centre having active contacts with the industry, particularly since the experience of industry could be of great value not only for the operation of the Centre but also for its establishment. The possibility of creative relationship between the Centre and industry should therefore

be thoroughly explored and the guiding principles on the structure of the Centre should directly address this question. He stressed the importance of selecting a proper site and also the problems involved in scaling up and process development. In his view high quality research and development in a wide variety of subject areas required a larger centre with more funds for capital and operational costs. He offered to co-operate fully with UNIDO in order to help ensure that the ICGEB succeeds in becoming a world "centre of excellence".

G. Final Report

79. It was decided that the report of the meeting will be finalized by the Chairman and the Rapporteur with the assistance of the UNIDO Secretariat on the following basis:

- a) Those parts of the report on which consensus had already been reached would not be altered. If any participant had a reservation on the consensus it will be recorded as addendum.
- b) Delegations may suggest amendments or modifications to other parts of the draft report. The Chairman and Rapporteur will examine them and incorporate them, if necessary, in the report or as addenda to the report. Such amendments or modifications should be sent to the UNIDO Secretariat not later than 10 January 1983.

ADDENDUM

The following communications were received after the Meeting (vide para 79):

1. France

Para 13 - We are of the view that the end of 1st sentence should be replaced by: "and are led to prefer a Centre which would be a light body responsible for co-ordinating the existing national efforts rather than a heavy centralized institution. In addition, they believe that numerous aspects of the UNIDO project deserve to be further studied in particular the new idea of the establishment of regional centres."

Para 18 - After sentence, "it was pointed out valuable" to add: "The relations and interactions between the different types of activities (research, development, training, links with industry etc.) should be better defined in order to enable a realistic and constructive choice."

Para 26 - Insert at the end "taking fully into account all the observations made in the meeting."

Re Para 51 - As regards the conclusions and recommendations it must be noted that the possibility of later participation in the ICGEB cannot be entirely excluded.

2. Germany, Federal Republic of

Having been represented at the Meeting only by an observer the Government of the Federal Republic of Germany is not able to take part in the consensus of the participants that an International Centre for Genetic Engineering and Biotechnology should be established soonest possible.

3. Netherlands

a) My government supports the idea of the establishment of a centre. It feels, however, that a centre of high excellence as referred to in UNIDO document IS/254 is too ambitious. My government therefore does not feel itself bound by item 3 of the conclusions and recommendations and all other matters related to that item. It strongly prefers a centre with more emphasis on training and information and less on fundamental research.

b) My Government suggested therefore the formation of an inter-governmental committee of experts to investigate the possibilities of a more modest but practical and less costly comprehensive set-up.

c) Despite all the generous offers that were presented this week, it seems evident that the formation of a comprehensive set-up, including affiliated centres, requires more funds and therefore needs a broader basis of support. It is with this in mind that my government believes it would be appropriate to raise the results of this meeting and, if available, the outcome of the committee report in the broadest possible forum of the UNIDO organization namely the IDB which gathers in May next year.

4. Union of Soviet Socialist Republics

Para 32 - At the end of the paragraph add "Scientific Council should be formed from the leading members of the Staff to act as a consultative body for the Director in questions concerning staff recruitment, elaboration of operational plans, evaluation of scientific results etc." This sentence might constitute a separate paragraph within the Chapter III as well.

Para 36 - After the first sentence add "Necessary provisions are to be made to guarantee a mechanism of transfer of results to the participating countries."

ANNEX I

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ANNEX II

LIST OF DOCUMENTS

		<u>Language</u>
	Aide-Mémoire	E F S
UNIDO/IS.254	The Establishment of an International Centre for Genetic Engineering and Biotechnology (ICGEB)	E F S A
ID/WG.382/1	Draft Memorandum of Understanding and Guiding Principles of the International Centre for Genetic Engineering and Biotechnology prepared by the UNIDO Secretariat	E F S
ID/WG.382/2 and Corr.1	Five-Year Work Programme of the International Centre for Genetic Engineering and Biotechnology prepared by the UNIDO Secretariat	E F S
ID/WG.382/2/ Add.1	Selective Application of Advanced Biotechnology for Developing Countries prepared by Carl-Göran Hedén	E F S
ID/WG.382/2/ Add.2	Application of Genetic Engineering for Energy and Fertilizer Production from Biomass prepared by Ray Wu	E F S
ID/WG.382/2/ Add.3	Hydrocarbon Microbiology with Special Reference to Tertiary Oil Recovery from Petroleum Wells prepared by Ananda Chakrabarty	E F S
ID/WG.382/2/ Add.4	Application of Genetic Engineering and Biotechnology for the Production of Improved Human and Animal Vaccines with Particular Reference to Tropical Diseases prepared by Ahmad Bukhari and Ulf Pettersson	E F S
ID/WG.382/2/ Add.5	Improved Agricultural and Food Products through Genetic Engineering and Biotechnology prepared by David McConnell	E F S
ID/WG.382/2/ Add.6	Bio-Informatics prepared by Carl-Göran Hedén	E F S
ID/WG.382/3	Proposed Budget of the International Centre for Genetic Engineering and Biotechnology prepared by the UNIDO Secretariat	E F S
ID/WG.382/4	Considerations Related to the Location of the International Centre for Genetic Engineering and Biotechnology prepared by the UNIDO Secretariat	E F S
	Provisional List of Participants	

ANNEX III

PROVISIONAL AGENDA OF THE MEETING

1. Opening of the Meeting.
2. Election of the Chairman and officers of the Bureau.
3. Adoption of the agenda.
4. Organizational arrangements.
5. Expression of interest by countries in their participation in the International Centre for Genetic Engineering and Biotechnology.
6. Guiding principles of the structure of the International Centre.
7. Work programme of the Centre including co-operation with national centres and ongoing international activities.
8. Decision on the location of the International Centre.
9. Financial contributions to the International Centre.
10. Arrangements for the follow-up of the meeting as well as preparation of a draft document for adoption by the ministerial-level meeting.
11. Other business.
12. Adoption of the report of the Meeting.

