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REPORT BY THE DIRECTOR-GENERAL ON THE EVALUATION OF THE FIRST PHASE OF THE INTERNATIONAL BASIC SCIENCES PROGRAMME (IBSP), AND PROPOSALS REGARDING DRAFT DOCUMENT 34 C/4 AND DRAFT DOCUMENT 34 C/5

SUMMARY

This report is a follow-up to 172 EX/Decision 12. It presents an assessment of the first phase of the International Basic Sciences Programme (IBSP), based on consideration of the take-off of the IBSP, initial returns of the projects launched in 2005, the development of partnerships, and lessons learnt so far. As the first phase of the IBSP will be terminated in 2007 and its strategy fulfilled, the report introduces principal elements of a new strategy proposed for the forthcoming phase of the programme falling within the Medium-Term Strategy for 2008-2013 and the Programme and Budget for 2008-2009. The major elements of the new strategy highlight the promotion of regional and international cooperation in capacity-building in the basic sciences and science education, and seek considerable reinforcement of the concentration of the IBSP by focusing IBSP activities on a limited number of major priority actions (MPAs) and the development of a continuous interface with Member States.

Decision proposed: paragraph 46.

I. INTRODUCTION

1. At its 172nd session in September 2005, the Executive Board examined the report by the Director-General on the development of the International Basic Sciences Programme (IBSP) and strategy of action proposed for 2006-2007 (172 EX/13). The report presented comprehensive information on the IBSP activity at its nascent stage, and the Director-General's proposal regarding action to follow up 169 EX/Decision 3.5.1 in which the Executive Board invited the Director-General to present the IBSP in document 33 C/5 as a new flagship initiative that has a specified strategy, content, expected results and budgetary provisions.

2. The Executive Board examined and endorsed document 172 EX/13, and asked the Director-General (172 EX/Decision 12) to submit a report to the 176th session of the Executive Board and then to the 34th session of the General Conference on the evaluation of the first phase of the IBSP and proposals regarding the Medium-Term Strategy for 2008-2013 and action proposed for 2008-2009.

3. Although it was only in August 2005 that the implementation of the IBSP projects began and only the very initial phase of operations has therefore been carried out, the evaluation proposed by the Executive Board provides an opportunity to identify both the lessons to be learnt and an optimum strategy for the future development of the IBSP.

4. The present report is a follow-up to the above-mentioned 172 EX/Decision 12. Its analysis and conclusions are based on the findings of the ministerial round table The Basic Sciences: Science Lever for Development convened by the Director-General (Paris, October 2005), deliberations at the second meeting of the IBSP Scientific Board (March 2006), and further consultations with the Academy of Sciences for the Developing World (TWAS), the European Organization for Nuclear Research (CERN), scientific unions in the basic sciences of the International Council for Science (ICSU), IBSP project leaders, and members of the IBSP Scientific Board.

II. TAKE-OFF OF THE IBSP: LESSONS AND APPRAISAL

5. The first call for IBSP project proposals sent to National Commissions was designed as a launching pad for the IBSP. It resulted in over 250 project proposals drafted in line with established guidelines being submitted to UNESCO. These proposals were duly endorsed by the relevant National Commissions for UNESCO. The proposals received related to different areas of science (physical sciences: 33%; biological sciences: 40%; science education: 11%; and areas beyond the mandate of the IBSP – ecology: 10% and others: 6%), differed in scale and duration and complied, to varying degrees, with the criteria for IBSP projects proposed by the Director-General and endorsed by the Executive Board (169 EX/13).

6. Each of the project proposals had a substantially sound scientific rationale and, as recommended in the guidelines circulated for the first call for proposals, alongside the support being sought from UNESCO the majority of them specified the extrabudgetary resources other sponsors were to make available. Although different in substance, taken together the project proposals provided explicit evidence of the need of Member States to strengthen their national capacities in the basic sciences, in particular through regional and international cooperation. They also provided an initial practical insight into what Member States are expecting from the IBSP activity and, therefore, an initial legitimate basis for action. Thanks to the timely collection of project proposals, the IBSP Scientific Board, set up by the Director-General, did not only address procedural issues at its first meeting in January 2005, but was also able to evaluate proposals received and to recommend 39 projects to be carried out within the first phase of the IBSP for 2005-2007. The recommendations made were reported to the Executive Board in document 172 EX/13. These recommendations sought to concentrate the IBSP on the implementation of a

limited number of priority projects that could catalyse a substantial action for capacity-building in science, and would not call for an unrealistic budget.

7. Already in 2005, 17 of the 39 IBSP projects recommended by the Scientific Board were launched and received support. According to the assessment made by the Board in its report to the Director-General in 2006, this was possible thanks to the prompt follow-up action that UNESCO had taken to provide the necessary funds needed to launch the projects. This is noteworthy since no resources were foreseen for these projects in the Programme and Budget for 2004-2005 in view of the fact that, at the time of its preparation, the General Conference was still to take a decision on the establishment of the IBSP. The Board also highlighted and expressed appreciation for the support that was provided for the projects by the United States State Department and TWAS, the UNESCO Offices in Cairo, Jakarta and Venice, and the participating institutions which were successful in obtaining extrabudgetary contributions for their projects from a variety of sources. All the activities launched in 2005 have been carried out and reported on to UNESCO, and have been the subject as well of an evaluation in the framework of the IBSP Scientific Board.

8. The Board considered that the biennial Programme and Budget for 2006-2007, which is the first to incorporate the IBSP, provides a relevant presentation of the IBSP as a flagship activity that constitutes an autonomous integral element of the Organization's main line of action in the basic sciences. The budgetary provisions for the IBSP are ensured within the overall budget available for the basic sciences in 2006-2007, which itself is on the low side compared to 2004-2005. Because of these constraints, the Board urged that in 2006-2007 the IBSP focus principally on the implementation of the projects already selected and that promising opportunities for a limited number of major IBSP initiatives for 2008-2009 be explored through dialogue and consultation with Member States and partner organizations within the basic sciences programme. The remaining projects selected in 2005 were all launched in 2006 and their implementation will last until the end of 2007.

9. The monitoring of the IBSP is carried out by its Scientific Board, a category V Advisory Committee governed by Statutes proposed by the Director-General in 2004 and subsequently approved by the Executive Board at its 169th session (169 EX/Decision 3.5.1). The members of the Scientific Board were appointed by the Director-General in pursuance of consultation with the electoral groups of UNESCO, TWAS and ICSU. To date, the Board has convened three times, once in 2005, again in 2006, and finally in 2007, only shortly before the current session of the Executive Board. The Rules of Procedure adopted by the Board have been approved by the Director-General.

10. When considering all developments that have taken place during the initial phase of the IBSP, it may be concluded that all the measures needed to launch the IBSP and make it fully operational were taken in a timely fashion, and that 32 C/Resolutions 14 and 15, as well as 167 EX/Decision 3.4.2, 169 EX/Decision 3.5.1 and 172 EX/Decision 12 concerning the IBSP have been duly followed up. Nonetheless, the following observations provide some evidence that there is still room for improvement.

11. On receipt of the first call for project proposals, a number of National Commissions for UNESCO took helpful actions to disseminate information on the IBSP and initiate proposals from their national scientific institutions. One such example is the National Committee for the IBSP, established by the National Commission of the Russian Federation, which evaluated national project proposals in order to select those to be submitted to UNESCO by order of priority. However, it appears from contacts with the UNESCO science networks that although full information was sent to all National Commissions in addition to being available on UNESCO's website, national institutions were not sufficiently aware of the IBSP in some countries. This resulted in sharp differences in the number of proposals submitted by the various countries (for example, from Latin America 36 proposals were submitted by Brazil against 3 from Argentina and 2 from Chile; from Asia, 31 were submitted by Indonesia compared to 15 from Malaysia and 1 from Viet Nam; from Eastern Europe, 23 were submitted by Ukraine against 5 from Bosnia and

Herzegovina and 1 from Romania), not to mention the differences in the nature of the proposals received (e.g. real international ventures against activities of a national character more relevant to the Participation Programme, etc.).

12. This points to the need for further efforts to ensure that national and regional institutions are better aware of the opportunities offered by the IBSP. Such efforts may effectively facilitate the preparation and submission of quality proposals that lead to significant partnerships in capacity-building, and avoid small actions with limited short-term returns. For this purpose, it may be opportune to nominate an IBSP national focal point under the umbrella of the National Commission for UNESCO, or to establish a National Committee for the IBSP, two possible scenarios proposed by the IBSP Scientific Board at its second meeting in March 2006 that may indeed provide a practical basis for an improved interface with national institutions. The National Commissions may also wish to inform the Director-General of their experience in preparing project proposals, thereby making it possible to identify challenges encountered and exchange best practices.

13. Bearing in mind that some National Commissions may not be in a position to easily provide expertise on a project proposal in science, some scientific institutions asked whether it should indeed be compulsory for the Commission to endorse a project proposal. However, for UNESCO this endorsement provides important evidence of the involvement of a National Commission in the submission of a project proposal and the commitment to it by the national authorities.

14. Given the importance of communication with National Commissions regarding IBSP matters and the volume of papers to be submitted, circulated and processed, it would be expedient to set up a mechanism for facilitating the processing and evaluation of proposals for the IBSP. Email communication may not be considered appropriate, as access to electronic communication is not available to some science institutions in certain countries, or because of reluctance to have signatures sent electronically, or because supporting documents from various countries may be separated from the main proposal, etc. The possibility of setting up an FTP/IBSP server which is accessible to National Commissions, the IBSP Secretariat, and members of the IBSP Scientific Board could therefore be examined in consultation with National Commissions. If this is feasible and agreeable to National Commissions, continuous dialogue could be established with Member States and the IBSP Scientific Board for the preparation, execution, evaluation and development of an IBSP activity. However, National Commissions will still need to provide UNESCO with one signed hard copy of their finalized proposal.

III. CONTEMPLATING ADVANCES IN THE EXECUTION OF IBSP ACTIVITIES

15. At this initial stage of the IBSP, the number of activities carried out so far and reported on to UNESCO is of course limited. However, assessment of the execution of some projects in the framework of the ongoing evaluation carried out in cooperation with the IBSP Scientific Board may be useful.

16. In **Africa**, Project 5-KE-01 on the “Establishment of the East African Biological Resource Centre to secure the conservation and sustainable utilization of microbial diversity” seeks to enhance regional science capacity through the development of an infrastructure for identifying and preserving microbial genetic resources and their sustainable utilization to support the development of biotechnological industries. The project also helps build up regional human capacity in the isolation, identification, characterization and *ex situ* conservation of organisms, as well as in business development and the utilization of information technologies.

17. Two launching workshops were organized within the project, one in the United Republic of Tanzania (Dar es Salaam University) and the second in Uganda (NatureUganda and Makerere University in Kampala), two countries which have a wide range of ecosystems containing internationally significant biodiversity. The workshops brought together over 60 participants from research institutions, government agencies, universities and industry in Kenya, Tanzania, Uganda

and the United Kingdom, as well as from NGOs to analyse how the facilities needed for the long-term preservation of micro-organisms can be established and the resources to characterize them and harness their properties provided. The conclusion was that the Microbiological Resource Centre should be based upon existing institutions and established networks and linkages. Four laboratories were identified and chosen for the enhancement of facilities to provide microbiological resource collections covering medical, non-pathogenic plants and animal pathogens. Another objective of the workshop was to engage potential sponsors. This resulted in the Council for Science and Technology (COSTEC) in Tanzania and the National Agricultural Research Organization (NARO) in Uganda offering their support. Since the project meets the objectives of the New Partnership for Africa's Development (NEPAD), and the East African Community (EAC), the workshops explored and identified routes for future funding from NEPAD and EAC.

18. UNESCO's limited funding was mostly used to bring the workshops' resource people and participants to the meeting venues. The workshops were followed by a scoping study carried out by CABI and supported by CABI Partnership Facility funds, as well as by a country workshop in Kenya supported locally. Two ad hoc committees were put in place to develop suggestions for further actions. The activities undertaken offer a novel opportunity for strengthening national capacities through cooperation within a regional biological resource centre that will provide new sources of food, reduce agricultural losses, develop new drugs and contribute to environmental stability through soil fertility, bioremediation and waste management. This form of cooperation is the type of partnership needed to attain the Millennium Development Goals. Thus, it is proposed that the project be further developed within the IBSP.

19. In **Asia**, Project 4-ID-12 aims at the "Improvement of capacity-building on genetic resources management through development of a DNA databank in Indonesia". This project, based on regional cooperation, in particular with the participation of Japanese institutions, seeks to improve the Indonesian DNA Data Bank, save genetic materials which are economically and ecologically important, and preserve biological diversity. The implementation of the project focuses on capacity-building in science for counteracting the lack of human resources in bioinformatics, the lack of capability to construct an advanced database, and the missing facility for recombinant technology-based research.

20. The project enabled the concept for pursuing the development of the Data Bank for Indonesian Fauna to be elaborated. Moreover some 50 Indonesian researchers received training at the training course conducted by two Japanese and two Indonesian invited lecturers. The International Nucleotide Sequence Data Base, molecular evolution and comparative genomics, the use of the DNA Data Bank of Japan (DDBJ) and the databases available in the DDBJ were among the main issues addressed at the course that laid ground for cooperation between Indonesian and Japanese institutions. Four scientific missions to work at the laboratories of the National University of Singapore (NUS) resulted in the launching of cooperation in DNA bar-coding research. As a result, an important step forward has been made to build up national capacity for genetic resources management. Follow-up activities to the project offer an opportunity for enlarged cooperation in the region.

21. In **Latin America**, the Unidad de Actividad Fisica of the Centro Atomico Constituyentes (UAF-CAC) in Buenos Aires, Argentina, and the Istituto per lo Studio dei Materali Nanostrutturati (ISMN) in Bologna, Italy, initiated Project 3-AR-03 on the "Experimental study of magnetic oxide-based nanostructures". The activities carried out developed UAF-CAC/ISMN cooperation in research and training, and reinforced the scanning probe facilities at the UAF-CAC that could become a benchmark centre for basic research in the area of nanotechnology in the region. It should be recalled that nanometric structures of different magnetic, magneto-resistive and ferroelectric materials offer promising opportunity for progress in information technologies. For this reason, the project team carried out the sophisticated synthesis of nanometric structures of manganese oxide-based compounds and their experimental study, thereby providing the electrical, structural and magnetic characterization of the nanostructured and polycrystalline materials produced.

22. Another noteworthy development was recently highlighted in the release issued by the office of the Prime Minister of Grenada. As pointed out in the release, Dr Khotso Mokhele, former President and Chief Executive of the National Research Foundation of South Africa, has undertaken a UNESCO/CARICOM mission to evaluate the status of science and technology in the region and meet stakeholders in Grenada, Barbados, Jamaica, Guyana and Trinidad and Tobago. This mission is an example of an action supported by the IBSP in cooperation with CARISCIENCE for the purpose of providing scientific expertise for, and advice to policy- and decision-makers.

23. In **Central and Eastern Europe**, Project 2-RU-04 on the "Educational and fundamental study of plasma in nature, laboratory and applications" was initiated by the Moscow Institute of Physics and Technology (MITP) and the Institute for Higher Energy Densities (IHED) of the Russian Academy of Sciences in cooperation with the Institute of Experimental and Theoretical Physics in Moscow (Russian Federation), Al Farabi Kazakh National University in Almaty (Kazakhstan), the Institute of Physics and Viet Nam National University in Hanoi (Viet Nam), and the Institute of Plasma Research in Gujarat (India). The project is focused on the development of an international plasma research and education centre for developing countries in the Asian and African regions, and of a network of benchmark scientific-educational laboratories in developing countries for cooperation with world centres of excellence in plasma physics such as MITP and IHED in the Russian Federation, the Massachusetts Institute of Technology (MIT) and Stanford University in the United States of America, Cambridge University in the United Kingdom, Johannesburg University in South Africa, Pisa University in Italy, and international research centres, such as CERN in Geneva (Switzerland) and the Joint Institute for Nuclear Research (JINR) in Dubna (Russian Federation).

24. During the first phase of the project, three international meetings on plasma physics were held to launch and develop cooperation between the participating institutions, namely a workshop in Moscow (November 2005), a seminar in Almaty (January 2006), and a winter school in Hanoi (June 2006). The Research and Education Centre for Basic Investigation of Matter under Extreme Conditions (REC) established by IHED and MITP is promoting cooperative research and education programmes such as that in plasma science developed by MITP for graduate and postgraduate students from developing countries, including Viet Nam, India, Kazakhstan and Myanmar.

25. Project 2-RU-04 has also benefited from research and travel grants from the Kazakh Ministry of Science, the Russian Foundation for Basic Research, the Russian Ministry of Education and Science and Global Oilfield and Information Services Schlumberger Company. As a result, over 80 lectures, including public lectures, were delivered by participants of the project in countries such as Viet Nam, Kazakhstan, China, Republic of Korea, France and Lithuania. Universities and institutions involved in the project received equipment worth around US $500,000.

26. In **Western Europe**, the Leibniz Institute of Freshwater Ecology and Inland Fisheries (LI) in Stechlin-Neuglobsow, Germany, in cooperation with Alemaya University (Ethiopia), Kenyatta University (Kenya), the National University of Mexico (Mexico) and the Government College in Rajastan (India), is developing Project 1-DE-09 on the "Potential and risk of mass developments of the cyanobacterium Arthrospira, an important food resource in tropical inland waters". For many centuries, Arthrospira has been a source of vegetable protein in Africa, Asia and Latin America. The partner institutions came together to explore and outline areas of intervention for the development of ways to differentiate between the two categories of strains (toxic and non-toxic) and lay down the techniques for the protection of life from the dangers of poisoning, and for the safe use of Arthrospira. The project launching workshop, held with support from UNESCO and TWAS at the German institute in Stechlin-Neuglobsow in November 2005, has done the groundwork for the identification and putting in train of the partners' actions concerning pertinent areas of science, education, capacity-building, public awareness and exchange of information. At the workshop, participants explored the procedures for the collection of phytoplankton and sediment samples from lakes, and the preparation of cyanobacterial samples. During the practical part of the workshop they acquired the experience needed to start preliminary sampling for the project. A common scientific approach was developed and nine lines of action were identified and

agreed upon. Efforts to be made by each partner to recruit students for a Masters or Ph.D. degree were specified, as were training courses and seminars to be organized for scientific capacity-building, and activities designed to disseminate knowledge to the local population and to promote the exchange of information. The project responds to pressing healthcare and environmental preoccupations and as such is worthy of sustained support by national governmental institutions. The IBSP, for its part, extended support to this project in 2007.

27. Although a complete review of all the other initial IBSP activities goes beyond the framework of the present report, it is still expedient to mention successful developments within such projects as the development of mathematical physics in Africa (Project 5-BJ-01, host country: Benin), the promotion of science education through UNESCO associated centres for microscience experiments (Project 5-ZA-1, host country: South Africa), and the development of antiviral agents against avian influenza virus (Project 4-VN-01, host country: Viet Nam). Overall, it may be concluded that the projects carried out so far have responded to the expectations of the proposing countries, yielded useful results, and paved the way for further action.

IV. LOOKING AT THE DEVELOPMENT OF PARTNERSHIPS

28. As stated in 32 C/Resolution 14, the IBSP is called to reinforce intergovernmental cooperation in strengthening national capacities in the basic sciences and science education through major region-specific actions involving a network of national, regional and international centres of excellence or benchmark centres in the basic sciences. These actions would be particularly efficient if undertaken by UNESCO in cooperation with its partners in science, e.g. scientific IGOs, and NGOs, international and regional research and training centres, sponsoring bodies, industrial enterprises, and already-existing UNESCO science networks. The pool of intellectual and other resources of the partners concerned is an essential prerequisite for the IBSP to multiply its ability to provide the services Member States need. This is why the IBSP was conceived as one of the instruments in science for attaining the Millennium Development Goal, which calls for fostering global partnerships for development. For this reason, it is opportune to assess whether in practice the IBSP demonstrates that it is able to provide a framework for the development of partnerships. To this end, consideration should be given to a number of facts.

29. Since the inception of the IBSP, TWAS has been interested in the IBSP, and has provided support to selected IBSP projects. In March 2006, an ad hoc Agreement on partnership with TWAS within the IBSP was signed. The Agreement envisages in particular that:

(a) TWAS will foster the active participation of its institutions and networks, such as the Network of Centres of Excellence in the South and the Third World Network of Scientific Organizations (TWNSO), in the implementation of the IBSP projects in cooperation with relevant field offices of UNESCO;

(b) TWAS will provide sustained financial support to the IBSP, in particular for projects to which it attaches a noteworthy priority; and

(c) UNESCO and TWAS will consult each other in order to identify an optimum common strategy for joint action within the IBSP.

30. This Agreement made it possible to grant TWAS the status of major IBSP partner as envisaged in Article 5.2 of the Statutes of the IBSP Scientific Board. In line with Article 2.2 of the said Statutes, the representative of TWAS has been co-opted on to the Scientific Board. UNESCO appreciates this new opportunity for partnership with TWAS, which is the most relevant partner in a programme focused on capacity-building in science in developing countries.

31. In pursuance of consultations between UNESCO, CERN and the Abdus Salam International Centre for Theoretical Physics (ICTP), CERN, which is a world-renowned intergovernmental centre

of excellence, offered a training programme for scientists from developing countries. Once trained, these scientists will be twinned with CERN scientists, even after they have returned to their home institutes. Another cooperative action proposed by CERN is the setting up of electronic networks to share scientific information – it should be recalled that it was CERN that was at the root of the creation of the World Wide Web. As a first stage in this action, CERN proposed to provide advanced training for technical experts, particularly those from South-Eastern Europe. In line with the recommendation of the IBSP Scientific Board, the actions proposed by CERN are being launched. There exists, of course, ample opportunity for further developing the long-standing ICTP/UNESCO cooperation.

32. The SESAME (Synchrotron-light for Experimental Science and Applications in the Middle East) Centre in Allan, Jordan, is another intergovernmental centre playing a part in the IBSP. SESAME was established under the auspices of UNESCO in 2004 along the model of CERN. Cooperation between the SESAME Centre and UNESCO is now an integral element of the IBSP that provides the most relevant framework for its development. In the opinion of the IBSP Scientific Board, the establishment of such a centre and the development of its activity is a perfect example of the type of activity that can be carried out under the umbrella of IBSP. Therefore, the IBSP is pursuing the efforts UNESCO has been making to increase the number of Member States participating in the project, spread excellence in research in the region by organizing training activities, and develop networking of synchrotron radiation laboratories in and outside the region. This strategy of action is bearing fruit. Indeed, Cyprus has recently become a member of SESAME and France and Portugal have become observers. Other countries are also likely to join the project soon. France is donating equipment to SESAME and the Brazilian Government is providing three long-term fellowships at the Brazilian Synchrotron Light Laboratory (LNLS) for young scientists from SESAME countries committed to pursuing a career at SESAME. Moreover, IAEA has signed a Memorandum of Understanding with SESAME covering a period of four years during which it will provide an overall budget of US $750,000 for the training of fellows and provision of expert advice.

33. The IBSP also offers a new dimension for cooperation with the scientific unions in the basic sciences affiliated to ICSU with which UNESCO has a long-standing history of cooperation – among the more recent examples of such cooperation one may cite the International Year of Physics, the International Mathematical Year and the Chemistry for Life programme that UNESCO organized jointly with IUPAP, IMU and IUPAC respectively.[1] Indeed, the IBSP has a new mechanism for interface with partners such as the scientific unions. So it was that in 2006, memoranda on cooperation within the IBSP were elaborated and signed with the IUBMB[2] and IUPAC. Moreover, Professor Annick Suzor-Weiner, the IUPAP officer responsible for external relations, is a member of the IBSP Scientific Board. Besides, when consulted on its participation in the IBSP, ICSU recommended that direct partnership in it be developed with its scientific unions. UNESCO therefore envisages earmarking resources for this partnership from its biennial budgetary contribution to the implementation of the third UNESCO/ICSU Agreement for 2008-2013.

34. Collaboration with the industrial sector is also being developed, and consultation between L'Oréal and UNESCO on joint actions within the IBSP to promote women in science resulted in a decision to identify a L'ORÉAL/UNESCO fellowship programme for young women in the life sciences under the umbrella of IBSP. Likewise, the development and evaluation of other UNESCO/L'ORÉAL activities, whether in the regions or on the international stage, will also be carried out within the framework of the IBSP. These activities will be implemented with the participation of UNESCO Headquarters, field offices and National Commissions. The biennial Programme and Budget for 2008-2009 is expected to reflect the promising opportunity the IBSP offers women scientists.

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1 IUPAP – International Union for Pure and Applied Physics; IMU – International Mathematical Union; IUPAC – International Union for Pure and Applied Chemistry.

2 IUBMB – International Union for Biochemistry and Molecular Biology.

35. At the regional and international level, there are opportunities to foster further cooperation with NEPAD, CARISCIENCE (a UNESCO-affiliated regional network of research departments playing a key role in the development of the basic sciences in the Caribbean), the Israeli-Palestinian Science Organization (IPSO), the Islamic Educational, Scientific and Cultural Organization (ISESCO), the InterAcademy Panel, the recently established Regional Centre for Biotechnology Training and Education in New Delhi, India, and, of course, traditional important partners such as ICTP and the International Centre for Pure and Applied Mathematics (CIMPA) in Nice, France.

36. Overall, the development of partnerships within the IBSP shows that they may well lead to a consolidated common effort in capacity-building in science worldwide.

V. INNOVATING THE IBSP STRATEGY IN THE FRAMEWORK OF DRAFT DOCUMENT 34 C/4 AND DRAFT DOCUMENT 34 C/5

37. By its very nature, the IBSP is one of the practical means for catalysing and fostering the global action called for to attain two of the principal objectives presented in the Medium-Term Strategy for 2008-2013, namely the overarching objective “Mobilizing science for sustainability”, and especially strategic programme objective 2 “Promoting policies and capacity-building for science, engineering and technology”. Indeed, the IBSP mandate recommended by the Executive Board at its 165th session, and endorsed by 32nd session of the General Conference, highlights:

(a) building national capacities for basic research, training, science education and popularization of science through international and regional cooperation in development-oriented areas of national priority;

(b) transfer and sharing of scientific information and excellence in science through North-South and South-South cooperation; and

(c) provision of scientific expertise for, and advice to, policy- and decision-makers, and increasing public awareness of ethical issues that progress in science entails.

38. This mandate also meets the expectation of the Overall Review Committee for Major Programmes II and III that considers UNESCO’s role as a capacity-builder as one of the key issues relating to UNESCO’s main mission and its programmatic activities (175 EX/INF.12, para. 14(i)). This concurrence between the mandate of the IBSP and the expectation of the Committee provides the programme with a platform to address other key issues raised by the Committee. These conclusions of the Committee should stimulate UNESCO to take all the necessary precautions to avoid the drawbacks the Committee feels may be encountered in the strategy of international/intergovernmental science programmes.

39. It is also noteworthy that the ministerial round table “The Basic Sciences: Science Lever for Development” convened by the Director-General called upon UNESCO to place greater emphasis on promoting the basic sciences and science education with a view to the attainment of a science culture as a precursor of a knowledge-based society worldwide, through various means available at UNESCO, and in particular the recently launched flagship International Basic Sciences Programme (Communiqué of the ministerial round table, para. 26 (a)).

40. All this would seem to indicate that Member States were far-sighted when they decided to establish the IBSP for providing a relevant platform for action in capacity-building in the basic sciences. This was recently again demonstrated by 175 EX/Decision 21 (para. 69 (ii)) that acknowledges the key role of basic sciences within the biennial sectoral priority 2 “Fostering policies and capacity-building in science and technology”. The initial strategy of the IBSP that allowed the needs of Member States to be identified and prompt responsive action to be taken will be fulfilled during the current biennium. This is why one of the principal issues that the IBSP

Scientific Board addressed at its second meeting (March 2006) was the new IBSP strategy to be followed in the framework of the preliminary proposals by the Director-General for draft documents 34 C/4 and 34 C/5. When seeking a new strategy, the Scientific Board took into account the lessons learnt during the first phase of the IBSP. As a follow-up to this second meeting and further consultations held, a set of key elements on the strategy to be pursued during the forthcoming phase of the IBSP was elaborated. These key elements embrace:

(a) new scope of concentration of the IBSP: establish a limited number of major priority actions (MPAs) that consolidate and focus activities on the principal goals of the programme and offer better opportunity for a flexible symbiosis between the IBSP and other activities in science, instead of focus on isolated projects;

(b) building of capacity in the basic sciences and networking: a mandatory priority that must remain a key element of the IBSP strategy, but should include strongly reinforced efforts to promote science education and provide scientific advice to policy- and decision-makers, as well as to increase public awareness of, and commitment to, science;

(c) optimizing partnerships: sign memoranda of understanding (MOUs) with selected strategic partners; carefully plan common actions; use some of the initial proposals received as optimum examples – e.g. from CERN;

(d) coping with disciplinary diversity: focus on actions that foster excellence in the basic sciences and their alliances through networking and training; promote interdisciplinary actions; avoid narrow research-oriented activities;

(e) cost-efficiency: promote a cost-sharing approach with partners; develop fundraising schemes; secure financial help from governments and donor agencies;

(f) marketing: focus on regional and global levels; reinforce involvement of UNESCO's Regional Offices; consider preparation of science assessment reports; use other ongoing activities – e.g. meetings – to advertise IBSP; use nominations to "IBSP-associated centre/programme" ("branding") as part of marketing;

(g) new approach to networking: map existing networks, especially in the South; identify, nominate and activate new hubs; use "the science of networking" as part of IBSP; and

(h) continuing stocktaking and learning from experiences: a series of evaluative actions is already in place and will be reinforced to become key monitoring elements.

41. Although the above-mentioned key elements are in fact self-explanatory, some remarks would nonetheless be expedient, particularly as regards the role of element (a) that seeks to make a considerable step forward for concentration of the IBSP action within the entire new strategy. More specifically, it is proposed to focus the IBSP on five major priority actions (MPAs) related to the basic sciences and their services for societal needs, namely:

(a) institutional capacity-building (MPA 1);

(b) human resources development in research and advanced training (MPA 2);

(c) promotion of science education (MPA 3);

(d) leverage and transfer of scientific knowledge (MPA 4); and

(e) international science expertise and advocacy for science (MPA 5).

42. The proposed strategy implies that each of these major actions will group in a tangible, goal-oriented effort IBSP activities that strive to meet a common objective instead of concentrating on separate, isolated projects that originate from ad hoc calls for project proposals This *modus operandi* will of course imply the establishment of a continuous interface[3] with Member States so that there may be permanent communication with the IBSP Secretariat and the IBSP Scientific Board for the purpose of identifying IBSP activities that yield real returns and avoiding small-scale projects that can be undertaken under other actions of the science programme, or under the Organization's Participation Programme.

43. These major priority actions will be interdependent and will serve to develop a global international scientific infrastructure based on centres of excellence and science networks, which ensures services for development at national, regional and international levels, as called for in 32 C/Resolution 14. To this end, the major priority actions will encompass cooperation with UNESCO science partners in the support for, and creation of, centres of excellence and networks, as well as in the promotion of their services for research, training, leverage and transfer of scientific knowledge, the improvement of university science education and its links with other levels of education, the assessment of national capacity in science and advice on measures to be taken to reinforce them, or to ensure that they have the critical mass required for national development.

44. During the first biennium of the Organization's Medium-Term Strategy for 2008-2013, it is proposed that the IBSP lay emphasis on major priority actions 1, 2 and 5, while at the same time preparing a platform for a novel consolidated full-scale effort to be undertaken under major priority actions 3 and 4 during the second and third biennia. This action in the second and third biennia will be carried out in cooperation with the Education Sector and the Communication and Information Sector. In the course of implementation of the Medium-Term Strategy, the IBSP will also promote science education, provide expertise required to address ethical issues that are emerging from progress in science, disseminate scientific knowledge essential for knowledge societies, and promote a culture of peace through dialogue and cooperation in science.

45. In the Natural Sciences Sector, the IBSP will become an integral element of the family of international/intergovernmental scientific programmes, in particular with a view to providing and advancing basic scientific knowledge required for meeting fundamental human needs and addressing complex interdisciplinary issues that underlie sustainable development. Generally, the IBSP will seek to consolidate and develop international and regional infrastructures in the basic sciences in order to make them an efficient means of implementing national agendas for development.

Proposed draft decision

46. The Executive Board may wish to adopt a decision along the following lines:

The Executive Board,

1. Recalling 172 EX/Decision 12,

2. Having examined document 176 EX/11,

3. Noting that the IBSP mandate, and the partnerships in capacity-building in science that the IBSP promotes are reflected in the strategic programme objectives for the Organization as set out in its draft Medium-Term Strategy for 2008-2013 (34 C/4), and aim at providing the science inputs for assisting countries to attain the Millennium Development Goals (MDGs),

[3] Information on the practical procedural issues relating to the interface with Member States will be communicated to National Commissions and posted on the Internet once the proposed strategy of action has been endorsed by the Executive Board.

4. Recognizing that the IBSP is a response to a recommendation by the World Conference on Science and that UNESCO has the unique responsibility for the basic sciences within the United Nations system,

5. Calling for an enhanced partnership with ICSU scientific unions in the framework of the IBSP,

6. Considering that governments, the private sector and international organizations should provide increased support for building up adequate and evenly distributed capacities in science and science education as a prerequisite for a knowledge-based society and sustainable development,

7. Referring to recommendations of the ministerial round table on The Basic Sciences: the Science Lever for Development,

8. Takes note of the assessment of the initial phase of the IBSP presented in document 176 EX/11 and recommends that it be submitted for information to the 34th session of the General Conference, together with the conclusions of the Executive Board;

9. Approves the proposals made by the Director-General as regards the future IBSP strategy;

10. Recommends that Member States continue to inform the Director-General of activities that they would propose for the IBSP, and of complementary extrabudgetary support they may provide to reinforce the IBSP budget for the implementation of their proposals;

11. Invites the Director-General to:

    (a) take actions for implementation of the strategy proposed in document 176 EX/11 for the development of the IBSP activity in 2008-2013;

    (b) encourage, within the third UNESCO/ICSU Framework Agreement for 2008-2013, direct participation in the IBSP of relevant scientific unions of ICSU;

    (c) prepare and circulate to National Commissions, in 2008, an information document on the IBSP and its functioning within the established strategy of action; and

    (d) submit to the 181st session of the Executive Board and then to the 35th session of the General Conference a report on the development and returns of the IBSP during the first biennium of the Medium-Term Strategy and on measures to be taken to promote the services and efficiency of the IBSP.