



Connect



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International Conference on Science, Technology and Mathematics Education (ICSTME-2001)

Goa, India, 20 - 23 February 2001

The CASTEME-UNESCO-HBCSE International Conference on Science Technology and Mathematics Education for Human Development, 20-23 February 2001, held at Panaji (Goa), India, was hosted by the Homi Bhabha Centre for Science Education (HBCSE), a national Centre of the Tata Institute of Fundamental Research, Mumbai, devoted to science and mathematics education. Financial support was provided by UNESCO; Commonwealth Association for Science and Technology Educators (CASTME); Commonwealth Secretariat (COMSEC); the Departments of Science and Technology and Biotechnology of the Government of India and Indira Gandhi National Open University. Apart from UNESCO, CASTME and COMSEC, other partners of *Project 2000+* namely, International Council of Associations of Science Education (ICASE), World

Council of Technology Education (WOCATE), and Association for Gender and Science and Technology (GASAT) also took active part in the organization of the conference.

The conference was announced both electronically and through the print media. A large number of educational journals also gave publicity to the event. As a result, there was an overwhelming response to the conference with around 600 applications from different parts of the world. About 450 proposals for presentations at the conference were received of which 210 were accepted for short presentations, workshops and posters.

The conference was inaugurated by the Governor of the state of Goa with the Chief Minister and Minister for Science and Technology of the state as well as representatives of all the organizing institutions in attendance.

The conference was targeted mainly at educational planners and administrators; curriculum developers; teacher educators; teachers, researchers and specialists in science, technology and mathematics education (STME) as well as representatives of concerned voluntary organizations. Its aims and objectives were as follows:

- To provide a forum for exchanging ideas on various themes focusing on the role of STME in human development
- To assess the impact of projects promoting scientific and technological literacy and numeracy and to work out targeted programmes for the next decade
- To identify new strategies to narrow the gap between developed and developing countries in the field of STME
- To work out how new ICTs can be used for enhancing the reach of STME for all

- To develop a consortium of international organizations working in STME
- To promote the access and participation, notably of girls and women, in STME and related areas.

Six keynote lectures were arranged to provide an overview of the issues involved in STME:

1. *Perspectives on the Classroom Teaching of Mathematics* – Prof. Jerry Becker, University of Southern Illinois, Carbondale, USA.
2. *Science for Citizenship* – Dr Jane Gregory, University of London, London, UK.
3. *Technological Literacy, Scientific Literacy and Education: Confusions and Imperatives* – Prof. Michael J. Dyrenfurth, Iowa State University, Ames, Iowa, USA.
4. *Primary School Science and Mathematics Education: Beijing Perspectives* – Dr Abdul Aziz Kadir, Academy of Sciences, Kuala Lumpur, Malaysia.
5. *Challenges of Science Education* – Prof. Richard White, Monash University Centre London, UK.
6. *Gender Issues and STME in Africa* – Dr Jane Mulemwa, Education Service Commission, Kampala, Uganda.

In addition to the above keynote lectures an evening enrichment lecture entitled *Diverse Country, Changing Needs: Designing New Initiatives for Indian Education* by Prof. Roddam Narasimha, National Institute of Advanced Study, Bangalore, India, was also arranged.

Nine major themes were retained for discussion during the conference:

1. Curriculum Reforms for Human Development
2. Assessment and Examinations
3. Learner Centred Professional Development
4. Scientific and Technological Literacy for All
5. Popularization, Public Understanding and Life-long Learning

6. Affordable Cost-effective Technologies and Infrastructure
7. Bridging the Gulf between Research and Classroom Practice
8. Empowerment of women
9. Ethics, Human Rights and Culture of Peace.

The nine themes were grouped into the following six strands and the responsibility of each strand was assigned to one lead organization:

Curriculum and Assessment	CASTME
Cost Effective Technology and Research	WOCATE
Professional Development	COMSEC/UNESCO
Scientific and Technological Literacy	ICASE
Empowerment of Women and Ethics	GASAT
Theoretical and Empirical Issues in STME	HBCSE

One hundred and sixty papers were thus presented in six parallel sessions simultaneously. In addition, two parallel sessions were organized to accommodate 20 workshops. One more parallel session was devoted exclusively to the discussion of the Conference Statement which was made available to the participants at the beginning of the conference. Participants discussed the document in the light of the presentations and deliberations held under different strands separately. These discussions led to the preparation of a **Framework of Action** for each strand which were then compiled, debated and finalized in a plenary session on the final day of the conference.

The conference was designed to incite maximum interaction among participants. Thus, apart from keynote lectures, paper presentations and workshops, poster sessions were arranged in the conference together with tours and cultural programmes.

A total of 30 poster presentations were made by the participants/participating organizations describing their activities. UNESCO presented an exhibition of posters

based on Children's Views on Science in the 21st Century. The posters were exhibited throughout the conference so that participants could see them at their convenience. In addition, a separate time slot was earmarked for interaction with presenters for clarifications and explanations.

Conference tours afforded yet another occasion for informal

interaction among participants. Apart from educational and research institutes, they were taken to various religious and heritage sites in Goa. A cultural programme was specially organized to highlight the distinctive Goan culture and traditions.

Three hundred and sixty participants from 43 countries attended the conference. Developed as well as developing countries were represented in the conference, which offered an excellent opportunity for exchange of experiences between the two groups. It is worth mentioning that the conference attracted academicians, administrators and research workers from the 5 major world regions: Africa, The Arab States, Asia-Pacific, Europe-North America and Latin America and the Caribbean including countries as diverse as Argentina, Bangladesh, Cameroon, China, Cyprus, Finland, Honduras, Japan, Kuwait, New Zealand, Poland, Uganda and U.K.*

The Indian participants came from all parts of India and like their international counterparts represented a variety of professional fields such as school and university teaching, teacher training, research



in STME, educational administration and voluntary agencies.

The conference intended notably to allow the participants to:

- Share and enhance the understanding of current and future trends in STME
- Gain knowledge/understanding of practical strategies to address prevalent issues within a global, regional and local context
- Establish networks for optimizing ICT use to minimize development and equity gaps
- Appreciate and be proactive and responsive to the increasing impact of STM on society outside the formal education sector
- Develop a vision for the future growth of STME and its role in human development

It also presented the possibility for various organizations to hold their professional meetings and to decide on future course of action. The CASTME Annual General Assembly, for example, was arranged during the conference where elections were held for the office bearers for the next term. CASTME awards were given during the inaugural function of the conference and, more importantly, an Asian branch, CASTME-Asia, was established during the conference. GASAT and ICASE also held their meetings during the period of the conference.

A questionnaire was circulated among the participants to get feedback on the conference in which participants were asked to rate the different aspects of the conference

such as: keynote addresses, workshops, poster and parallel sessions, venue, accommodation and administration. The overall analysis of their responses showed that the majority of the participants (53.50%) accorded the conference a 'Good' rating, with 29.82% judging it 'Excellent', 14.91% 'Average', and 0.87% each for 'Below average' and 'Poor'. A large number of messages received after the conference confirmed the overall positive evaluation of the conference.

The ICSTME was also a noteworthy event in that international organizations like UNESCO, CASTME and COMSEC came together and collaborated with a local institution to organize a conference in a developing country. It could be considered as a beginning of collaborative ventures to improve the status of science and mathematics education in the world.

It was regrettable that due to the shortness of time and the number of presentation proposals submitted, a certain number of potentially good presentations could not be accepted. Furthermore, for the same reasons, even accepted papers could not always be accorded the required time. These limitations severely restricted the time left for post-presentation discussion. Nevertheless, the conference gave an opportunity to the participants to know what is going on in their respective fields. They could exchange ideas and experiences with their professional colleagues

working in altogether different educational environments. It is expected that the contacts established during the conference will be strengthened. In order to facilitate this interaction a list of participants along with their postal and e-mail addresses was circulated among all the participants.

One of the important outcomes of the conference was the drafting and approval by the conference of a **Framework of Action** to be circulated widely to ministries, government and non-governmental organizations, specialized and research institutions as well as voluntary organizations interested in STME for greater impact on the teaching of science, technology and mathematics education at all levels and in all the regions of the world. It is planned to publish the detailed proceedings of the conference which will be made available on a large scale. Efforts will be initiated in the regional offices of UNESCO and regional branches of CASTME to integrate the recommendations of the conference into the educational systems in order to build a better future and bridge the human divide.

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* The 43 countries are as follows: Argentina, Australia, Austria, Bangladesh, Botswana, Brazil, Cameroon, Canada, China, Cyprus, Estonia, Finland, France, Germany, Honduras, Israel, Italy, Japan, Kenya, Kuwait, Lesotho, Malaysia, Mauritius, Nepal, Netherlands, Nigeria, Norway, New Zealand, Pakistan, Philippines, Poland, Portugal, Republic of Korea, Saudi Arabia, Sri Lanka, Slovak Republic, South Africa, Thailand, Uganda, United Kingdom, U.S.A., Zimbabwe and the host country, India.

UNESCO Activities Worldwide

UNESCO/UNEP collaboration on Youth and Sustainable Consumption

This collaboration started in March 2000 (v. *Connect*, Vol. XXIX, No. 2, 2000) with the UNEP Research Project on Youth and Sustainable Consumption including a preliminary survey conducted in 24 countries as well as 6 in-depth country case studies on the issue carried out in Australia, Canada, Italy, Mexico, Norway and Thailand (v. *Box below*)

Following this, an expert workshop on Youth Sustainable Consumption and Lifestyles was organized jointly by UNEP-UNESCO in Paris, on 6-7 November 2000.

The objective of the workshop was to discuss the development of a cohesive strategy for the two organizations in order to promote the adoption of more sustainable consumption patterns among youth. The workshop gathered over 50 experts and stakeholders (business, government, NGO, academia), as well as youth representatives.

The discussions built upon the results of the UNEP research project and the research work carried out in six countries by UNESCO experts. For the purpose of this workshop, 'youth' referred to persons between 18 and 25 years.

The underlying understanding of the meeting was that youth deserves special attention when considering consumption patterns. Young people make up an important target group within the demand side in this consumer society and play a determinant role in future consumption patterns. Yet, they should not only be regarded as 'victims' of a contemporary consumer culture. Sometimes young people are more concerned about the future of the earth they will inherit and thus their voice should be heard. Moreover, there are some groups of young people who are taking initiatives in proposing alternatives to this "consume more" trend. They can be messengers of a new approach that can involve their peers, as well as adults. Therefore, understanding consumption patterns of younger generations is of great relevance for the analysis of macro policy and economic trends world-wide.

The discussions addressed the following issues:

1. Awareness: How do young people link their day-to-day actions with the environ-

ment, human rights and other social issues? Do they realize that their choices and behaviour have an impact on people and the environment?

2. Sense of empowerment: Do they feel they have the power to change things as individuals and/or as a group? How do they intend to act?
3. Differences in continents/ countries: How are these questions answered in different cultural areas? Does the difference depend on the role of youth in the country, religion, level of democracy?
4. Policy tools: How can policy-making impact youth consumption patterns? What are the best strategies for enabling future action in education, research and advocacy?
5. Designing concrete strategies of action and multi-stakeholder networking activities for the promotion of more sustainable life styles among youth and other sectors of civil society

One of the notable outcomes of this workshop was the publication of a policy paper "Youth, Sustainable Consumption Patterns and Life Styles" (MOST Publishing House 2001) reflecting the results of the UNESCO/UNEP research project. It draws from the research project material to design policy recommendations for future actions from UNEP and UNESCO to promote sustainable consumption among youth.

The paper aims at understanding youth attitudes towards consumption and at evaluating their potential as actors of a transition towards more sustainable lifestyles. In particular, it looks at:

- driving forces of youth consumption and especially the influence of media and globalization in shaping their aspirations and values;
- youth perception of sustainable consumption and their role in it; and
- experiences in approaching consumption issues in different cultural areas.

Future Action

The following proposals for action by UNEP and UNESCO were made by the workshop participants:

- Improve information flow on the concept of sustainable consumption and its

practical translation into day-to-day actions;

- Give examples of success stories;
- Organize a campaign on shopping;
- Facilitate contacts and information sharing;
- Introduce sustainable consumption into school curricula, providing training materials and teacher kits; and
- Promote media literacy among youth.

As a response to these proposals we are currently working on a web-based Training Tool-kit on Sustainable Consumption targeting notably teachers, youth organizations, youth leaders and environmental and consumer organizations.

The training material will:

1. include background information on issues and problems linked to current consumption patterns in more affluent regions and social groups and to the impact these patterns have on the environment and society especially in more disadvantaged areas of the world;
2. be practical: translate the implications of unsustainable daily choices in figures and facts easy to visualize;
3. be pro-positive – focusing on the empowerment of youth in changing consumption patterns outlining the "do"s rather than the "don't"s;
4. provide success stories to visualize the solutions given to sustainable consumption and awareness raising in different contexts;
5. be adaptable to the local differences and to the various ways of delivering the sustainable consumption message in different cultural areas;
6. focus on leveraging youth creativity in finding solutions to the sustainable consumption challenges and enhance their influence on family choices and their peers;
7. be tested before release: during drafting, the material will be submitted to its potential users for their comments and the final draft will be tested in two or three pilot sessions to verify its applicability.

The training toolkit should be finalized before the end of this year and available on the web.



Summary of the Results of the Research Project (Survey and Country case studies)

The survey tried to identify consumption drivers and patterns among youth as well as evaluating their potential as actors of a transition towards more sustainable consumption patterns. The survey did not intend to be a scientific consumer research. It rather offered a very first insight into the lifestyles and concerns of the young public and represented a first step in a dialogue between UNEP/UNESCO and tomorrow's decision-makers.

Around 10,000 youths in 24 countries were requested to answer the questionnaire "Is the future yours?" which was disseminated between July and September 2000. Over 8,000 replies were received but unfortunately not all of them arrived in time to be analysed. The survey report is therefore based on 5,322 replies from 24 countries: an average of 250 replies per country which show that:

- Young people recognize an environmental and social impact of their use and disposal of products and services, however they do not yet acknowledge the impact of their "shopping behaviour".
 - Young people share many of the same values, however the social implications of production and consumption are much more important in Africa, Asia and Latin-America than in the other countries.
 - Youth tends to rely rather on unorganized forms of everyday action than organized mobilization as a strategy to improve the world.
- Six country experts illustrated the relationship youth/consumption in Australia, Norway, Mexico, Thailand, Canada and Italy:

Australia: Australian society is ambivalent towards environmental issues. On the one hand, young Australians are ardent environmentalists, planting more trees, cleaning up more miles of beaches than almost any nation. On the other hand, they are brought up in a huge country with very low population density, and very soon acquire materialist and consumerist habits that are all but impossible to shift. (Dr John Fien: *Towards Sustainable Consumption in Australia*)

Norway: Norwegian students and young workers with good pay and with no family commitments have very high consumption. The study focuses on how various government and non-government policies are able to influence and regulate this consumption. (*Youth, Consumption and the Environment: the Norwegian Case* by Ms Ragnhild Brusdal)

Mexico: This study looks at the cultural and economic diversity present in the youth population of Mexico, and attempts to define "What is youth?". The study analyses the interest and convenience for the Mexican society to adopt sustainable consumption patterns and what the government can do to encourage such a shift. (*Environment, Consumption and Youth: Overview for Mexico* by Mr Alfredo Navaz)

Thailand: The country's economic boom and bust roller of the last few years has left youth at the mercy of media and marketing campaigns. There are, however, interesting NGOs and youth movements towards green-consumption, anti-smoking campaigns, and Cheevajit (literally bio-spiritual) movement that are promoting better, more natural and less expensive ways of healthy livelihoods. (*Youth and Sustainable Consumption in Thailand* by Mr Surichai Wun'gaeo)

Canada: The Canadian report attempts to demonstrate the complexity and diverse discourses around the issue of sustainable consumption and tries to show how varied the idea of 'youth' is and the variety of activities in which they engage. (*Youth Action and Learning for Sustainable Consumption*, Dr Darlene E. Clover)

Italy: The Italian paper uses the survey's results to identify two big groups of young consumers: the interested and not interested in sustainable consumption. The paper gives their profiles, their political orientation, their education level and their consumer profile. Italian youth shows a greater awareness about the environmental impact of their waste disposal and travel patterns. Not so much about their food and clothes behaviour and their power as consumers. (*Youth and sustainable consumption: the Italian case*, research coordinated by Dr Fulvio Beato)

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UNESCO and UNCCD¹ educational kit to combat desertification

Faced with the challenge of combating desertification and the need to raise public awareness using educational tools that stimulate the younger generation, UNESCO is launching an educational kit on desertification in collaboration with the Secretariat of the UNCCD. This novel kit is principally targeted at higher primary level teachers and their pupils, aged 10-12 years. Its positive approach demonstrates that desertification is not inevitable and that everyone, at his or her own level, has a role to play in the earth's future.

Desertification is a wide-ranging problem as it has both natural and human dimensions. It generates environmental degradation and the depletion of natural resources that lead to poverty and hunger. Combating desertification evokes both the preservation of the natural heritage of the world's drylands and its contribution to poverty eradication. Children demonstrate a spontaneous interest in questions relating to nature and the environment and the role they play in tomorrow's world make them the obvious front line players in this collective combat. UNESCO and the UNCCD strive to help them better understand environmental problems and stimulate their search for possible solutions while promoting the notion of sustainable development. The educational kit on desertification is a valuable tool that can be fully adapted by teachers at the end of primary school education. The information contained in it can be integrated into regular school curricula in subjects as diverse as geography, history, science, mathematics and languages as well as for practical outdoor activities. The kit comprises five elements in a presentation case: a teacher's guide, a series of case studies, three copies each of the two cartoons and a poster.

- The teacher's guide *Learning to combat desertification* comprises 20 units intro-

ducing the various aspects of the desertification phenomenon in a didactic manner. Part one of the guide explains the causes and consequences on climate and the geographical, biological and socio-economical effects of desertification. The second part introduces the UNCCD and provides ideas and activities to solve the problem of desertification. Each unit, covering four pages, is richly illustrated with photographs and attractive graphics and proposes class activities intended to raise awareness on environmental protection.

- A series of case studies: *Combating desertification bears fruit* citing concrete projects implemented in twelve countries who have ratified the UNCCD: Algeria, Chile, China, Equator, The Gambia, India, Italy, Kenya, Niger, Peru, Spain and Uzbekistan. Each case study consists of six pages outlining the causes and effects of desertification in the country concerned and describes the specific circumstances and solutions applied to improve its situation. The teacher will find on the first page a review table, a map displaying the geographic location of the project undertaken, statistical country data and a summary of the case study. A general overview of the theme to be tackled is thus presented as well as the educational perspective relative to the geographical and socio-economical context of the pupils. As is the case with the teacher's guide, this series proposes class activities at the end of each case study.
- The first cartoon: *The school where the magic tree grows*, was inspired by the case study submitted by an NGO in Chile based on the work by pupils to create a nursery in their primary school. The cartoon extends the case study and sees the young Chileans travelling to Europe and Africa meeting local populations

suffering effects of desertification and exchanging with them their own experiences.

- The second cartoon: *There is no rug big enough to sweep the desert under*, tells the humorous story of a small village affected by desertification and its fight against land degradation. The characters learn to modify their agricultural and irrigation techniques. This cartoon was published by the UNCCD in 1997.
- The colour poster (120 cm x 80 cm) is intended to be displayed in the classroom where it will be visible to all. It is essentially made up of a world map presenting the various drylands of the globe and illustrated with representative photographs. Simple practical activities to combat desertification are exposed using expressive pictograms.

In the initial phase, the kit will be distributed in three languages (English, French, and Spanish) among selected primary schools in countries affected by desertification and principally through the UNESCO Associated Schools network (ASPnet) and the UNCCD Secretariat. In the following phase, it is hoped that the kit will be translated into other languages (Arabic, Chinese, Russian, Hindi, Swahili, etc.) in the countries affected by desertification. A CD-ROM version of the kit as well as an Internet site is eventually envisaged.

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1. United Nations Convention to Combat Desertification



Second International Conference

“Young Scientists’ contribution to Industry, Science, Technologies and Vocational Education for Sustainable Development: Problems and New Solutions”

Moscow, 13-17 November 2000

This conference was organized by the International Center of Educational Systems (ICES) and affiliated international UNESCO/ICES Chair networks with financial support from UNESCO and the Ministry of Industry, Science and Technologies of the Russian Federation. It followed upon the first conference on the same theme also held in Moscow from 29 November to 3 December 1999.

The conference attracted over 300 participants from the following countries: Azerbaijan, Belarus, Benin, China, Ghana, Kazakhstan, Kenya, Morocco, Nigeria, Russia, Syria and Ukraine. The participants included notably young scientists, post-graduate students, schoolchildren, educators as well as representatives of Russian and International organizations.

The conference objectives were to share the experiences and concerns of young scientists, particularly as regards presentation and publication of their work, and getting advice from academicians and experienced researchers.

The conference thus aimed to focus on the following themes:

- Expansion of the financial framework for Research and Development (R&D)
- Institutional reforms stimulating initiative and competitiveness of scientific and research teams

- Improvement of educational systems and research training
- Promotion of scientific, innovation and information infrastructure
- Establishment of an intellectual and industrial property institute to protect authors’ rights
- Creation of a favourable climate for innovations by:
 - strengthening cooperation between governmental, commercial and non-governmental structures to promote scientific and technological policies
 - improving social importance and value of scientific knowledge and innovations
- Dissemination and application in a creative manner of advanced national and international experiences

The conference work was divided into plenary sessions, working groups and a round table session. Four sections were created for four working groups focusing on:

1. Philosophical and education problems of harmonious development of man-nature interface
2. Fundamental and applied sciences
3. Problems of geo-ecology, nature use and resource saving
4. Management of development

At the conclusion of its work, the major recommendations of the conference were:

- Governments as well as management, education and production sectors of all nations should prioritize the creation of adequate conditions for young scientists and specialists to attain their full potential through proper knowledge and self realization
- A public scientific board of the Conference should be created to work with youth
- UNESCO should include annual international conferences on training of young scientists in its next biennial programme
- The Council of Europe, European Training Foundation and other organizations should be addressed for financial and methodological assistance for holding similar conferences
- The Republic of Benin should be requested to host the next conference in the framework of the UNESCO/ICES Chair-Networks

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Regional Project for the Innovation and Development of Science Education

Latin America and the Caribbean

This project is the direct result of the process of innovation and review of education undertaken in the Latin American and Caribbean region (v. *Connect*, vol. XXV, No.3/4, 2000). Its lines of action were developed in keeping with the Budapest Declaration of 1999 and its implementation

will form part of the follow-up to the World Conference on Science.

In view of its aims and objectives, the project is divided into two components devoted to formal and non formal education.

The **formal component** consists of:

- *Strengthening regional, sub-regional,*

national and local capacities in order to introduce necessary curricular changes as well as to formulate new curricula integrating the new concept of science education. This implies work at the level of national science curriculum developers, and also in a variety of activities notably seminars and

workshops – local and national at country level and sub-regional and regional for the entire region – together with publication and dissemination of documentation for an effective exchange of information between countries of the region.

- *Training of science teachers*

Great emphasis is being laid on this line of action as science teacher training is a particularly complex subject in the region and special care is taken to develop modalities to suit the specificities of each country. A number of significant activities are planned under this head highlighting the need to:

- promote modalities that integrate pre- and in-service training, research and everyday teaching practices. Work has been undertaken in this direction with the help of teacher training institutes in various countries of the region. Developed and planned activities involve pre- and in-service training of science teachers, as well as research groups to form the basis of both types of training;
- research and propose innovatory science teaching models which seek to improve the quality of science education for all. In this context, centres of innovation in basic and secondary education have associated themselves to this project, which has had a great impact since it allows for close interaction between those who reflect upon the problems related to teaching/learning in science, practising teachers as well as children and youths – at the receiving end of education. Moreover, this also allows the

entire educational centre to be involved in innovation for the improvement of science teaching and not just the science teachers as is wont to happen in the majority of cases. The centres are also involved in the development of materials needed for the project:

- develop post-graduate training programmes in the region aimed at teacher trainers in order to form regional specialists capable of leadership and of promoting changes and reforms in teacher training in each country of the region;
- facilitate interchange of teachers in order to promote exchange of knowledge and experiences as well as to develop joint activities.
- *Establishment and consolidation of national and local groups to develop teaching/learning materials for teachers and students and to work with teachers in the various educational institutions.*
- *Utilization of new information and communication technologies for dissemination of information and educational innovations generated in the framework of the programme.*

All the activities foreseen in the project will be based on the following three fundamental principles:

1. Horizontal cooperation between the various project participants
2. Necessary flexibility to adapt to the various realities and the heterogeneity of the region as well as benefit from its diversity
3. Itinerant activities so as to involve all institutions and promote a sense of ownership

Partners and collaborating institutions:

- National Ministries of Education
- Universities and teacher training institutes (from the region and outside)
- Research groups (from the region and outside)
- Basic and secondary education institutions (public and private: elementary and high schools)
- Science teacher associations

The **non formal component** has been developed in keeping with the ultimate objective of the project: to facilitate the access of the entire population of the region to scientific literacy in order to allow for an easy and efficient integration into contemporary society.

Seeking to achieve scientific literacy for all, activities involving large sectors of the population, especially the more marginalized ones, are developed. The aim is to provide them scientific knowledge in order to help them improve their condition and quality of life.

Our collaborators in the development of this component are various NGOs, specialized institutions, regional teacher associations which, by means of seminars, workshops and the development of materials for wide dissemination allow the community to accede to scientific knowledge.

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Second National Workshop on the Use of ICT¹ in Mathematics Education in Secondary Schools in Egypt

29 October – 2 November 2000, Ismailia, Egypt

This national workshop was organized by UNESCO/Cairo in collaboration with the Planning, Programming and Monitoring Unit (PMMU)/Ministry of Education, World Bank, European Union and was attended by 33 educators (of which 4 women). The participants included supervisors, inspectors,

teachers from the governorates of Cairo, Giza, Ismailia and Kaloyoubia as well as researchers from the National Center for Education Research and Development.

The purpose of the workshop was to provide participants with training in basic ICT skills and to reflect upon the best manner of

utilizing these skills in designing classroom materials for mathematics courses.

The workshop also served as a means of identifying teachers, supervisors and researchers who could be entrusted in the future with conducting similar workshops in Arabic in various governorates.

¹ *Information and Communication Technologies*



The sessions consisted of presentations, discussions, group work and hands-on training and served to revise previously acquired skills of the participants while extending those related to mathematics teaching. The workshop included introductions to specific educational software packages designed for mathematics classroom use: Cabri geometry, a dynamic geometry package and Omnigraph and a graph plotting package. One of the strands of the workshop was devoted to the exploration of the world wide web. The major recommendations made by participants of the workshop were related to:

- Assistance from the Ministry of Education to purchase personal computers for the teachers
- Extension of the workshop duration to two weeks during the summer vacation
- Provision of more advanced courses on the same software
- Provision of Cabri and Omnigraph packages to participants' schools
- Development of networking among the participants
- Ensuring linkages between teachers and UNESCO/Cairo office

On the final day of the workshop, participants were asked to make an evaluation of the workshop by means of a questionnaire. Analysis of their responses showed a 59% rate of high satisfaction.

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Two Workshops on Promoting of Scientific and Technological Literacy (STL) for All Malaysia

Two workshops on the promotion of scientific and technological literacy for all were organized by SEAMEO-RECSAM* in the framework of *Project 2000+* in collaboration with UNESCO/Bangkok.

The workshops were aimed at familiarizing the participants with *Project 2000+* and related teaching materials, formulating regional STL strategies for the future in operational terms and to evaluate, modify and finalize the ICASE-prepared *Training of Trainers Draft Manual* (v. **Publications**, p.16)

This Manual was initially prepared by ICASE with funding from UNESCO in 1999 and is based on the STL philosophy put forward by *Project 2000+*. It is meant for teachers, teacher-educators and anyone who has the potential to cascade the philosophy and skills of developing STL materials. It was developed in order to encourage the rethinking of opinions in science education held by trainers of teachers and by persons running professional development programmes for teachers in the Asian region. Thus, one of the major targets of both workshops was to invite specialists from various countries of the sub-region to critically examine it for possibilities of adaptation to local conditions and thus gain a sense of ownership of the Manual.

RECSAM Workshop I was held at the SEAMEO-RECSAM premises, Penang,

Malaysia, from 10-15 May, 1999. It was attended by specialists in science education and curriculum development and government officials from Brunei Darussalam, Malaysia, Singapore and Thailand as well as from SEAMEO-RECSAM, UNESCO and ICASE.

The Workshop participants examined the Manual at length both from the point of view of the materials included as well as the text, keeping in mind its appropriateness for local conditions. Their conclusion was that despite the many good features it contained, and the fact that such a manual was sorely needed for training teachers running courses for developing STL materials, the Manual needed notably:

- to distinguish more clearly between STL philosophy, STL approaches, STL learning and STL objectives;
- to have a better focus and structuring of ideas and concepts;
- to clarify the issue of "two different science curricula in each country";
- to include criteria for the choice of teachers in developing adequate materials as well as more references to research on STL promotion in Asia (if available);
- to redefine summative assessment in order to clarify the difference between summative assessment and final assessment;
- to emphasize that STL materials are supplementary to existing materials;

- to have a more attractive and "user-friendly" presentation;
- to be piloted before distribution.

Based on the above comments and suggestions, it was hoped that the Manual would go through yet another round of reviewing before being disseminated, and countries would be encouraged to adapt and translate the materials based on their needs and context.

RECSAM Workshop II was organized as a follow-up to RECSAM Workshop I and held in Langkawi Island, Malaysia, from 16 – 20 September 2000. The participants included representatives from all SEAMEO members states: Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam as well as from UNESCO, ICASE and RECSAM. The specific objectives of this workshop were to:

- familiarize participants with the developments in science and technology education;
- gain experience for a better conceptual understanding related to the development of the teaching-learning activities included in the STL Manual for Teachers;
- review and finalize the Regional STL Manual for Teachers; and
- formulate follow-up projects for adaptation and utilization of the Manual in SEAMEO Member Countries.

* South East Asian Ministers of Education Organization, Regional Education Centre for Science and Mathematics

The workshop produced the third revised draft of the Manual, and formulated the following follow-up actions, to be implemented by UNESCO in collaboration with partners (SEAMEO-RECSAM and ICASE) at the regional and country levels:

- A 'Task Force' should be identified for the final editing of the Manual;
- The final edition should be distributed to participants at the Goa Conference, 20-23 February 2001 (v. *Connect, Vol. XXV, No. 3/4, 2000*) and to regional and national institutions and Science Teachers' Associations and other partners;
- An inaugural regional training of trainers should be organized at SEAMEO-RECSAM for familiarization, adaptation and utilization of the Manual;
- The Manual should be translated into national languages for easy adaptation and utilization so as to generate more

trainers that could promote and propagate STL;

- Collaborative research projects should be undertaken for information on the impact of STL on variables and constructs such as decision making and positive attitudes;
- The conceptual definition of the "STL Approach" should be clarified and, if necessary, the name should be changed for better understanding.

The materialization of the Training of Trainers' Manual on STL together with the recommendations put forward by workshop participants will, it is hoped, help propagate STL throughout the region at all levels, be it policy-making level, implementation level or even non-governmental level. The proposed inaugural training of trainers workshop followed by other similar workshops throughout the region that fully capitalize on the Manual and its various translations,

will spark the integration of STL philosophy and practice into pre- and in-service teacher trainings as well as classroom teaching. In addition, more STL materials that could supplement the existing curriculum in the region are expected to be generated and shared through the World Wide Web. Its impact on students' understanding, attitudes and motivation could be measured through well-designed research for the development of STL propagation in the 21st Century.

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Experts Meeting on Community Capacity Building for Environmental Sustainability

Kathmandu, Nepal, 29 - 31 March 2001

This experts meeting was co-organized by UNESCO/PROAP and the Research Centre for Educational Innovation and Development (CERID), Tribhuvan University, Nepal. It was attended by experts in environmental education (EE), community education and participatory action research from environmental NGOs, learning resource centres and Ministries of Education from India, the Maldives and Nepal.

The objectives of the meeting were to:

- exchange information and ideas on community education for environmental sustainability
- discuss the environmental issues affecting India, the Maldives and Nepal
- develop a project framework on environmental sustainability for community empowerment
- initiate networking and partnership among the experts from participating countries in the fields of environmental education, community education and participatory research action.

In the course of this short but productive meeting, participants identified prevalent

environmental issues of their countries giving examples of EE activities implemented by their organizations and exchanged information and materials on the activities of their respective centres/agencies.

This provided the direction in developing a project framework, both for regional and national implementation, on community empowerment for environmental sustainability. The salient points of the project are:

Target groups: Marginalized and disadvantaged populations of rural communities

Overall Objectives: To improve the quality of life of the concerned communities by empowering them for environmental sustainability, thus ensuring their security and liberating them from unnecessary fear and want.

Approach: Through participatory action research using existing community infrastructures – physical and social; by linking schools to communities and through education and training to increase environmental consciousness/awareness, creativity/decision making, entrepreneurship, self-reliance and social responsibility.

Partners: Rural community leaders and youth groups; UNESCO and other UN agencies; International and National NGOs; local governments and schools; learning resource centres as well as existing infrastructures within the communities.

The project has been spelt out in 4 phases with on-going monitoring and evaluation as well as reporting and documentation at each phase.

Draft country plans have also been drawn up by participating countries and a project document is in the process of being completed for presentation to potential donors for funding support.

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Elmina Conference on HIV/AIDS and Education

Elmina, Ghana, 19-23 March 2001

This conference was jointly organized by UNESCO/Ghana and UNAIDS in cooperation with the Ministries of Education and Foreign Affairs of Ghana.

It was attended by over 130 representatives from 21 countries including senior experts from Ministries of Education and other key Ministries of 13 ECOWAS (Economic Community of West African States) countries as well as international NGOs and UN institutions, universities and bi- and multi-lateral donor agencies.

The objective of the conference was to consider how educators are responding to the impact of HIV/AIDS on education in West Africa where access and equity, quality and relevance and the ability to provide education services appropriate to national development are under threat.

Having considered the current and potential

impact of the disease on all education sub-sectors – from early childhood to higher education, and having underscored the need for the immediate mobilization of the Education sector in the largest sense, the conference outlined recommendations under five major domains around which action should be initiated or reinforced:

Leadership commitment, notably the pivotal role of heads of state and senior decision makers, the implementation of national and international commitments;

Preventing and controlling the spread of HIV/AIDS, emphasizing the role of preventive education in formal as well as non-formal sectors;

Protecting learners, educators and education quality, notably in the case of the increasing numbers of orphans and vulnerable children and the need to develop and

provide counselling services for teachers and students;

Managing the HIV/AIDS crisis in the Education sector, principally through the creation at national level, of a unit in each country with responsibility for HIV/AIDS;

Regional action, based on the creation of regional frameworks for cooperation, expansion of expert networks and closer cooperation with UNAIDS and other UN agencies concerned with HIV/AIDS and education.

For further information contact:
Mr Carl Ampah, Conference Officer,
UNESCO/Ghana,
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accra@unesco.org

UNESCO Chairs in Southern Africa

UNESCO chairs are being established in Southern African universities in the following areas:

- Geo-hydrology: for the training of young university staff in research in collaboration with the Department of Water Affairs, South Africa
- Mathematics and Science Education: at the University of Western Cape, South Africa
- Hydrology: at the University of Western Cape, South Africa
- Biotechnology: at the University of the North, South Africa
- Renewable Energy: at the ML Sultana Technikon, South Africa
- Renewable Energy: at the Chancellor University, Malawi
- Renewable Energy: at the Scientific and Industrial Research and Development Centre, Zimbabwe

For more information contact: Director, UNESCO/Harare, UNESCO sub-regional Office, PO Box HG435, Highlands, Harare, Zimbabwe.
Fax: +263-4-776.055 E-mail: uhhar@unesco.org

STEE Centres, Networks...

The Centre for Science and Environment

India

The Centre for Science and Environment (CSE) is one of India's leading environmental NGOs with a deep interest in sustainable natural resource management. CSE's strategy of "knowledge based activism" has won it wide respect and admiration for the

quality of its campaigns, research and publications which are trying to bring about change in an extremely difficult situation. For nearly two decades now, CSE has tried to educate a whole nation, from many of its top political leaders to its numerous rural activists,

on the importance of sustainable development, especially for the daily survival of the country's poor and its rural women. CSE has provided advance warnings, perceptive analyses and intellectual leadership in the field of environmental management. CSE's

insistence on respect for democracy, people's participation, traditional knowledge and modern science make it different even from most environmental organizations.

Its publications, especially its citizens' reports on the state of India's environment, have always been the combined product of excellent readability, networking and constituency-building and intellectual leadership, because of which they have received national and international acclaim.

CSE's research and publication work is consistently combined with advocacy and network building and this combination has generally succeeded in challenging entrenched mind-sets.

Its publications like the fortnightly magazine, **Down To Earth**, and the children's supplement **Gobar Times** (Cowdung Times)

help inculcate concern for the environment across the nation.

Apart from its work on natural resource management issues, it has major campaigns on air and water pollution, on the threats posed to public health by the changing environment, and a highly innovative project to bring about transparency in the industrial sector by rating the environmental performance of Indian firms. The project is expected to lead not only to increased transparency but also to reduction of corruption in pollution control inspection.

Its website carries its science and environment fortnightly *Down To Earth*, a daily environment news flash by subject categories, a catalogue of books and publications that are available, and all its recent press releases.

Regular updates are also given on all its campaigns on topics like vehicular pollution, climate change, biodiversity, water resources, wildlife, forests, etc. The online library of books, journals, images and videos is searchable through a thesaurus of environmental keywords at <http://data.cseindia.org> CSE are also looking for reciprocal linking to other websites in this area.

For further information contact:
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Carnegie Technology Education

U.S.A.

Carnegie Technology Education (CTE) is a non-profit subsidiary of Carnegie Mellon University founded to address the shortage of workers in software development and to extend the availability of Carnegie Mellon high-quality curriculum to students worldwide. Together with educational partners worldwide, CTE uses the Internet to deliver state-of-the-art courses leading to professional certificates in computer programming and software systems development. CTE distinguishes itself from other distance education offerings by providing curriculum delivery and support to its education partners – high schools, colleges, employers – who in turn provide students with live instructors.

CTE has developed effective partnerships across the world to deliver its offerings. While CTE applies Carnegie Mellon's unique expertise to the creation and upkeep of curriculum partners apply their knowledge of how best to teach, advise and support their particular student populations. It is important to note that the CTE curriculum is not designed to be delivered in a strict distance learning scenario, where the student uses remote resources exclusively to learn the required material. CTE regularly assesses and develops new partnerships at locations worldwide, especially where they are under-represented or not represented. Interested organizations

who value world class education in the area of computer science and are interested in evaluating a partnership with CTE, should e-mail their background and other particulars to CTE.

For further information contact:
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EcoCentro Puerto Madryn

Argentina

EcoCentro Puerto Madryn, first Argentinian institution to be dedicated to the marine ecosystem, is located on the Atlantic coast of Patagonia close to the Valdés peninsula. Its mission is to promote respect for and understanding of the environment through education, science and art.

The centre houses a permanent exhibition on the coastal ecosystem of Patagonia with facts, figures, anecdotes, pictures to awaken the curiosity of the visitor for even more information. It also maintains a library and two rooms for temporary exhibitions. Its activities include funding scientific research projects on the marine ecosystem

and widely disseminating their results. For the latter purpose it not only organizes exhibitions for the community but has a special room for 'scientific interpretation' where the common man can really get to understand the work of a scientist. The educational programme of the Centre is called "Mar abierto" (The open sea) which is



implemented in collaboration with schools. It comprises various activities including educational visits to the centre, training for in-service teachers as well as a programme specifically aimed at rural schools.

Visits to the centre are organized for groups of 30–45 schoolchildren – as well as school going adults – accompanied by their teachers. They are categorized according to theme and level and invite the visitors to discover the specifici-

ties of marine life through activities and games. The training programme for in-service teachers lasts for three days and is centred on a specific theme comprising field work, research, environmental interpretation, use of library and internet. The rural programme is meant to awaken rural communities to the significance of their own environment through the methods used by the EcoCentro with regard to the marine environment.

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Pakistan Environmental Lobbying Society (P.E.L.S.)

Pakistan

The Pakistan Environmental Lobbying Society (P.E.L.S.), a non-governmental organization active at the grassroots level, was established in 1997 thanks to the efforts of a geneticist from the University of Agriculture, Faisalabad, who felt that there was a dire need for an organization of volunteers to act as environmental lobbyists involving diverse communities of the society, employing scientific and indigenous resources to arrive at an environmentally sustainable society.

The aim of the Society is to eliminate poverty by providing training programmes in small businesses to the poor as well as to preserve the environment by employing environmentally sustainable approaches. To combat the dangerous consequences of globalization, like the disappearance of cultural diversity, the Society organizes a number of festivals to preserve local culture.

P.E.L.S. is a non-profit volunteer organization and depends entirely upon the contributions

of its volunteer members for funding its programmes.

Its mission is to:

- preserve the environment from degradation
- preserve a culturally diverse society in environmentally friendly atmosphere of love and tolerance
- train poor people to generate income to meet their basic needs through environmentally sustainable practices
- promote the spirit of volunteerism

In order to preserve the environment the Society encourages everyone at all levels – from the qualified professional to the layman – to act within their own capacity.

P.E.L.S. strives to achieve its objectives through the following actions:

1. tree planting campaigns
2. research projects to serve as indicators and to find ways to combat air, water and soil pollution

3. lobbying with industrialists, workers, legislators and bureaucrats in the interests of the environment
4. training volunteers to act as volunteer group promoters in their localities
5. organizing cultural festivals in order to preserve cultural diversity

The organization is aware of the need for training and capacity building in Environmental Education for its members in order that its campaigns have greater impact and also to expand its activities. It would welcome all assistance in this respect as well as information on resources which could be of help for training needs.

More information from:
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L'eau et la vie en Méditerranée

An inter-regional educational project

L'eau et la vie en Méditerranée (Water and Life in the Mediterranean) is an education and training project that was jointly conducted in Carthage (Tunisia) and Marseilles (France) from 1993–1997 in an institutional framework.

The main objectives of this project based on water, a formidable educational tool, are:

- Knowing and safeguarding water
- Learning to communicate information and knowledge

- Developing awareness of the multiple facets – appurtenance and identity wise, of water: in this case, the appurtenance to a region located around a sea, the Mediterranean, in the unity and diversity of its surrounding cultures.

The project was developed by the French and Tunisian committees of an international NGO, the SID (International Society for Development). It has involved around 1,800 children from 6–18 yrs (Grades 1–12)

as well as children from Leisure Centres who worked on a series of activities based on an inter-cultural, interdisciplinary and field pedagogy.

Together, the children learnt to discover and to love water as well as their natural, social, cultural and economic environment. They could thus come to realize that they belonged to the same region: the Mediterranean.

These discoveries were formalized in activities involving pupils of diverse ages, levels

and cultures leading to multiple and diverse concrete products such as games, models, journals, magazines, song books, poems, stories, press folders and tourism guides.

A certain number of these products were put together to make a resource kit one of whose distinguishing features is that it has been produced by children for children. Its evaluation and methodology has been published in *Une pédagogie de l'eau* (Water pedagogy), FPH, Paris.

This pilot project of joint education between the north and south Mediterranean was designed to set up an

inter-regional educational network based on water both in order to teach children its richness and fragility as well as to develop caring and sharing attitudes towards this precious resource.

In April 2001, L'eau et la vie en Méditerranée was awarded one of the two Mediterranean Water Prizes in the framework of Hydrotop, a biennial function organized by the Association for the International Water Week in collaboration with the Water Solidarity Programme (PSEau) and the Mediterranean Water Institute (IME).

We are now working to develop an edu-

cational network of activities focusing on awareness raising and pedagogical training on the theme of Water. We are interested in getting to know other inter-regional initiatives on educational experiences on water. We invite organizations with similar aims and interests to contact us.

Further information from:

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Doing it & Telling it

The environment as a focus of democratic culture

Nigeria

Place: Links International School (a private secondary school), Agege, Lagos State.

Target groups: The school population.

Introduction: Since democracy was restored in Nigeria only in July 1999, present secondary level students have not had the opportunity to experience democracy in the real sense of the word. As a result 'military' approaches (use of force, threats, harassment...) to problem-solving had often been perceived as the norm. A democratic spirit needed to be fostered in an environment of military culture. The conservation club of the school, an environment friendly club coordinated by the education department of the Nigeria Conservation Foundation (NCF), took it upon itself to make the environment the focus of democratic culture.

Objectives: There are no rigid objectives fixed for the programme. However, the aim of the programme is to develop a school community with a sense of responsibility to the school's environment; the development of a participatory approach to monitoring the environment and "dealing" with environmental offenders in the school in a civilized and democratic manner.

Resources: The main resources are human: students who largely make up the school's Environment Policy Committee (EPC) and entirely constitute the school's Environment Task Force (ETF) and the Judiciary Council. Occasionally, environmentalists, educators and lawyers are invited for expert advice. Funding is provided by the school management.

Methodology: The EPC, which was constituted in 1997 (two years before the restoration of democracy in Nigeria) started by interviewing all stakeholders in the school and came up with a *Links Environmental Policy (LEP)* which is periodically reviewed by the ETC. This was followed by the constitution of the Links Environment Task Force and the Links Environmental Court, membership of which is open to all students. The court is presided by a student judge and any student appearing in court can engage a lawyer free of charge. The ETF, made up of school prefects, can book any offender against the school's environment, who is informed of the section of the environmental policy contravened and is committed to court. If found guilty, offenders are "punished" by being obliged to per-

form environmentally oriented activities such as watering flowers, sweeping, etc.

Evaluation: No formal evaluation has been carried out except in the form of informal comments, praise or criticism.

Results: Our school has become noticeably more environment-friendly and the need to remind students of their duties has reduced drastically. Students' views regarding the necessity for military attitudes to inculcate discipline are fast changing and being replaced by diplomatic approaches and the use of legally acceptable means. Presently, the school is thinking of expanding the scope of the court to handle other cases.

Sent by: *Sanu Adepoju, Coordinator,
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Promoting food safety behaviour in low income group women

India

Place: Kalyan nagar slum, Baroda, Gujarat.

Target group: Women of low-income group with 6–17 month old children.

Introduction: In spite of numerous developments in various spheres of life, certain preventable diseases such as diarrhoea in young children, continue to plague human beings. To overcome this problem effectively some preventive education including public health and involving behaviour change needs to be undertaken.

Objective: A study was planned with the prime objective of assessing the diarrhoea profile of children (6–17 months) and the impact of imparting food safety education on “safe food” practices of lower income group (LIG) mothers belonging to an urban slum of Baroda.

Resources: This work is part of an M. Sc. dissertation work carried out by the author under close supervision of a guide, Dr M. Sheth. The project was partly funded by WHO.

Methodology: Two hundred households with children below 5 years of age were selected, their diarrhoea profile and socio-economic status (SES) were noted. From this a sub-sample of 30 families with 6–17 month children was purposively selected for assessing the environmental sanitation of the households, personal hygiene of mothers as well as the knowledge, attitude and practices of the latter in this respect. Microbial load of the food samples, hand-rinse and mop were also estimated in terms of Coliforms, total plate count and Staphylococcus aureus values.

A food safety education package was developed and education was imparted to selected mothers for a period of one month. This package incorporated three messages: washing hands with soap and water, avoiding feeding leftover food and keeping surroundings clean. These were imparted through lectures, slogans, posters, role-play, skit, puppet shows, etc.

Evaluation: The effect of food safety education was evaluated using the same parameters as used at the base line. The SES data indicated that most of the children belonged to nuclear family. The mothers of most of the children were illiterate while the educational status of the fathers was comparatively better. Sixty percent of households had access to individual toilets while the rest open-defecated. Sixty percent of children below the age of 5 years had either suffered from mild, moderate or severe diarrhoea in the recent past. Seventy three percent of 6–17 month old children suffered from diarrhoea.

Result: The environmental sanitation and personal hygiene scores of most of the households improved from average to good after food safety education intervention. Along with this, improvement in the knowledge of mothers regarding diarrhoea, its etiology, sources of micro-organisms was also seen.

In spite of awareness of micro-organisms, mothers continued to believe in superstitions such as the evil eye to be the cause of diarrhoea.

Knowledge of personal hygiene and importance of washing their hands as well as their

child's with soap before feeding, cooking, eating and after defecation, cleaning child's nose and sweeping/mopping also improved in the mothers of the experimental group. Consequently a large percentage of the mothers began using soap for washing hands after the above activities.

Percentage of mothers feeding leftover/overnight food to their children reduced after food safety education intervention. An increase in percentage of mothers thoroughly warming the leftover food before consumption was also noticed.

Reduction in microbial load of the food as well as the mop and the hand-rinse samples of mothers and children with respect to Coliforms, Total plate count and Staphylococcus aureus values was seen.

There was 33% reduction in diarrhoea in children. Hence food safety education intervention was successful in bringing about a positive change in the attitude and behaviour of the mothers, which led to improvement in their real-life practices thereby reducing the prevalence of diarrhoeal episodes in their children.

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Community Training in Environmental Management through Scientific Literature

Cuba

Place: Community of the Santiago de Cuba province.

Target groups: Professionals and the managerial sector.

Introduction: In 1997, in order to establish the fundamental directions regarding en-

vironmental education in the country, a national action plan was developed. Based on this plan, the Department of the Centre for Information and Management of Science and Technology of the Ministry of Science, Technology and the Environment decided to

focus on increasing environmental awareness among professionals and industrialists since these are the people directly concerned with decision making, social and development strategy planning as well as exploitation and use of natural resources.

Objectives:

- To establish and operate a system of environmental management and information destined for professionals of the industrial sector to raise environmental awareness
- To demonstrate the validity of this system through the level of environmental awareness acquired by the community

Resources: Material resources such as books, magazines, serial publications, bibliographies as well as human resources in the form of 4 professionals and 3 technicians as facilitators and coordinators.

Methodology: Among the activities implemented was the establishment of:

- A data base on the environment MEDIOAMBI
- A telephone service for references
- Specialized value added services – such as research, fact-finding

Besides this workshops were organized, special radio programmes were diffused and environmental awareness activities were carried out through the Centre as well as other branches of the Ministry of Science, Technology and Environment.

Evaluation:

Statistical breakdown: 105 calls were made for a total of 200 references of which 60% were for consultation on environmental matters.

15 firms of the region consulted this service notably in the sectors of sugar, agriculture and transport.

Of the 447 automatic bibliographic searches recorded, 47% related to environmental themes.

Science popularization includes 15 specialized programmes, 8 contests and 4 management of events.

The MEDIO AMBI data base comprises 256 updated registers as well as a first print version.

57% of the documents circulated relate to the environment, more particularly to EE; pollution of water, soil, atmosphere; laws, etc.

Compared with previous years, the documentation has increased by 56.9%.

Results: There were noticeable behaviour and attitude changes in the population notably at the decision-making level in the enterprises. This resulted in the elimination of sources of pollution, greater

awareness in young professionals and technicians, development of joint strategies for cleaning up services, as well as setting up of value added information services for the community.

There was an improvement of development and customer/client services as well as coordination and integration of the various actors and institutions related to the environment. The role of the Provincial Centre as the protagonist of the management of information was also consolidated underpinning the effectiveness of an ad hoc multidisciplinary group acting as facilitator of skills and knowledge in the development of value added projects and products.

*Sent by: Lic. Malena Melián Savignón,
Lic. Herminia Hernández Brito,
Téc. Rosa Martha de Nacimiento Torres,
MEGACEN,
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Combating deforestation at elementary school level

Mali

Place: Somadougou Elementary School, Cercle de Mopti.

Target groups: Pupils and their parents.

Introduction: In our locality, wood constitutes the basic resource for heating, lighting and construction, representing 80% of local energy consumption. More than half of the population lives in zones where the produce and regenerative capacity of trees is very feeble. As a result, women and children, whose work it is to collect wood, have to cover increasingly greater distances. It is known that anarchic forest exploitation leads to a denudation of the soil exposing it to wind and water erosion. Indeed, in Mali average wood consumption per capita is estimated at 1.3 tons/year – which for a population of 7,686,000 amounts to around 10 million t/yr. If we consider the other purposes that necessitate wood coupled with the feeble productivity of our forests due to droughts, we can easily realize the gravity of the

problem facing the country if concrete steps are not taken immediately.

Thus, on 3 August 2000, 2,304 saplings were planted in the courtyard of the Somadougou Elementary School by the pupils, their parents and teachers.

Objectives: Raise awareness among children, teachers and the community of the consequences of abusive wood consumption

- evaluate wood consumption per family and per village
- propose economy measures for wood consumption
- organize a workshop on renewable energies

Resources: No financial resources were received. Teachers and children collect seeds and make nurseries.

Methodology: Test to evaluate awareness in children and women of wood consumption and its effects on the environment

- proposing economy measures in consumption and sale of wood
- organizing a workshop for teachers and the population on renewable energies

Evaluation: No formal evaluation was made, but the reactions of both the teachers and the concerned population were positive.

Results: The reforestation carried out in the school allowed pupils and the population to realize that if this programme is correctly carried out, our combat against deforestation could make Somadougou a more "liveable" place.

P.S. Our limited means prevent us from extending our action. Support from friends worldwide would be more than welcome.

*Sent by: Absdoulaye COMPHA, Principal,
Somadougou Elementary School,
Mopti, Republic of Mali*



Readers are invited to send us their **FIELD experiences in Science, Technology, Environmental Education activities** involving the teaching/learning process – but not necessarily limited to students and teachers. They should be **as brief as possible** and set under the following headings:

Place: Locality where the activity was carried out

Target Groups: For whom the activity was intended

Introduction: Background information – reasons for initiating the activity

Objectives: What was the activity expected to achieve?

Resources: Materials/funds needed for the activity

Methodology: The way in which the activity was carried out

Evaluation: How was the activity judged? By whom?

Results: Did the activity produce any concrete changes in the target group(s)?

Selected experiences will be published with the name and address of the author. Please address your contributions to: **Doing it and Telling it** (address on last page)

News & Publications

UNESCO Site Case Study Encourages Understanding of Tourism Sustainability Issues

High school students of the Canadian Academy of Travel and Tourism programme from Hollands Memorial Central High School in Newfoundland, Canada, have been demonstrating their knowledge of sustainable tourism in Gros Mome national park – a UNESCO world heritage site. The case study will be featured in tourism high school curriculum around the world. The project, in report and video format, has been presented to the Canadian conference of tourism educators and businesses and also to the international Global Travel and Tourism Partnership Student Conference in Hungary, October 2000. Students from nine countries spoke about their country and about national parks and tourism issues during the global conference. The Canadian students' project will contribute to their academic high school graduation requirements and to their work placement requirements for the Canadian Academy of Travel And Tourism – a national industry, education and community supported programme offering tourism curriculum in qualifying Canadian schools. This and other case studies on world national parks and tourism are featured on <<http://www.gtp.prg>>. More information from: *Bonnie Stevens, Executive Director, Canadian Academy of Travel and Tourism Foundation, 170 Laurier Avenue West, Suite 1104, Ottawa, Ontario, Canada K1P 5V5. Fax: 613-231-6853 E-mail: bstevens@cthrc.ca*

Train the Trainer, an Environmental Management Systems (EMS) training kit has been developed by UNEP, the International Federation of Consulting Engineers (FIDIC) and the Internal Council for Local Environmental Initiatives (ICLEI). The Kit is a modular system designed to assist local authorities, municipalities and local governments in the development of a practical and pragmatic approach to implementing an EMS in their own organization. The kit provides a systematic approach to manage environmental issues based on the model of ISO 14001 (1996) while providing information on how to proceed for those who intend to be certified under this standard at a later stage of EMS development. It also provides a series of tools to integrate sustainable development planning into the various aspects and priorities of city management. The kit is targeted at 'change agents' such as local government associations and training institutes; city managers requiring a self-teaching tool

and promoters of the concept and practice of EMS. The kit comprises: thematic modules including resource kits, case studies, information materials and exercises for the implementation of EMS by local authorities and a method for training, organizing workshops and follow-up. For further information contact: *UNEP-IETC, 2-110 Ryokuchi Koen Tsurumi-ku, Osaka 538-0036, Japan. Fax: (81-6) 6915.0304 E-mail: ietc@unep.or.jp*

Due to increasing mailing costs **Appropriate Technology Forum** will henceforth be published only electronically. Future issues, published quarterly, will be available at: **www.at-forum.org**. Additionally, in order to stimulate discussion among readers, it will feature an Internet Forum on its homepage. More information at the website or from: <AT-Forum@energy-university.net>

Applied Environmental Education and Communication is an international, quarterly, peer-reviewed journal for academics and practitioners with the following sections: Editorial, News and notes, Forum, Research Articles, Reports, Books and materials reviews. Volume 1 is due for publication in 2002. For all enquiries about submission of articles, subscription rates, etc. please contact: *Academy for Educational Development, 1825 Connecticut Avenue, NW, Washington DC 20009, USA. Fax: 202-884-8997. E-mail: AEEC@aed.org*

The Science Education for Public Understanding Program (SEPUP) of the Lawrence Hall of Science at the University of California, Berkeley, USA (v. *Connect*, No.3/4, 1998), has announced that the

commercial version of *Science and Life Issues (SALI)* will be available in Autumn, 2001. This is a middle school life science course which has been finalized after two years testing in 8 National Field Test Centers. The course allows students to participate in ten different kinds of activities: investigations, laboratories, modelling, reading, role playing, problem solving, projects, field studies, talking it over and viewing and reflecting (video based activities). The course includes an assessment system with questions and tasks for students, scoring guides and sample responses. SALI pages and a sample activity can be viewed at the SEPUP website at: www.sepuplhs.org For further information contact: *LAB-AIDS inc. Tel: (800) 381-8003 Fax: (631) 737-1286 Website: www.Lab-Aids.com*

World Health Assembly awards Winners of the School Mental Health Contest

On 17 May 2001 the 54th World Health Assembly awarded a number of prizes to those who have made significant contributions to the development of public health in different countries and regions. During the same ceremony, WHO gave awards to the winners of the WHO Global School Contest on Mental Health, held in conjunction with World Health Day on 7 April.

Around 500,000 students from more than 60 countries world wide participated in this contest through which WHO intended to provide children with a better appreciation of mental health and to encourage schools to reinforce or initiate efforts to promote mental health education in the school health curriculum.

About one in five of the world's youth under the age of 15 suffers from mild to severe mental disorders. But most treatments are geared towards adults, despite the need for early intervention in childhood. For further information, please contact: *Ms Melinda Henry, Spokesperson's Office, WHO, Geneva. Tel.: (+41 22) 791 2535 (thereafter). Fax: (+41 22) 791 4858; E-mail: henrym@who.int. WHO web site: www.who.int*

2002 TYLER PRIZE for Environmental Achievement

The John and Alice Tyler Prize is awarded for environmental science, energy and medicine conferring great benefit upon mankind. The annual award is US \$200,000.

Citizens of all nations are invited to nominate individuals or institutions of any nation who have benefited humanity in fields associated with environmental science, energy and medicine. **Self-nominations are not accepted.**

Deadline for receipt of nomination forms: **15 September 2001**

For nomination forms and further information contact: *Dr Linda E. Duguay, Executive Director, The Tyler Prize, Office of the Provost, University of Southern California, 3551 Trousdale Parkway, 300, Los Angeles, CA 90089-4091, USA. Fax: 213-740.1313. E-mail: tylerprz@usa.edu http://www.usc.edu/tylerprize*



Forthcoming Conferences, Seminars, Courses...

Science Centre World Congress

Canberra, Australia, 10-14 February 2002

Hosted by: Questacon – The National Science and Technology Centre

Join us in Canberra to experience a Congress which will bring together the latest thinking on issues facing science centres and museums around the world. Science centres are becoming increasingly recognized and valued as a key part of national educational infrastructure, providing opportunities for informal learning in science and partnerships with formal education systems.

About 200 million visitors participate in the exhibitions and programmes of over 1200 science centres around the world each year ... and these numbers are growing. Whatever your involvement in formal or informal education, join us for a diverse and rich programme. Programme details are available on the Congress website: www.questacon.edu.au/iiscwc.html, or at the Congress secretariat: 3scwc@ausconvservices.com.au

IV International Workshop for Protection of the Environment and Geological Resources – **PROTAMBI 2001** organized by the Centro de Estudios del Medio Ambiente will be held in Moa, Cuba, from **23–25 October 2001**. Working languages: English, Spanish and German. Further information from: *Dr Allan Pierre Conde, Presidente del Comité Organizador ISMMM, Las Coloradas, Moa 83329, Cuba. Fax: (53) 24-62290. E-mail: protambi@moa.minbas.cu or apierre@moa.minbas.cu*

Eurisy's Ninth Information Youth Forum **Climate Change: Past and Future** will be held in Granada, Spain from **1–4 November 2001**. The overall aim is to encourage secondary school pupils and teachers in Europe, the Mediterranean countries and Argentina to take an active interest in space related activities. Working language: English. For further information contact: *EURISY Association, 3-4 rue Mario Nikis, 75015 Paris, France. Tel: (33-1) 47.34.0079 Fax: (33-1) 47.34.01.59 E-mail: lceurisy@micronet.fr [Http://www.eurisy.asso.fr](http://www.eurisy.asso.fr)*

Sixth International History, Philosophy & Science Teaching Conference organized by the International History, Philosophy and Science Teaching Group in conjunction with the US History of Science Society annual conference, will take place in Denver, Colorado, USA from **7–11 November 2001**. Further information from: *Prof. William McComas, School of Education, WPH 1001E, University of Southern California, Los Angeles, CA 90089-0031, USA. E-mail: mccomas@usc.edu [Http://www1.umn.edu/ships/hpst/2001](http://www1.umn.edu/ships/hpst/2001)*

Council for Environmental Education National Conference will be held in London, U.K., **22 November 2001**. Supported by RSPB, DFEE, DFID and DETR, the conference will focus this year on raising awareness of the value of environmental experience in securing commitment to sustainable development. Further details from: *Anne White, Council for Environmental Education, 94 London Street, Reading RG1 4SJ Tel: 0118 950 2550 Fax: 0118 959 1955 E-mail: awhite@cee.org.uk Website: www.cee.org.uk*

International Conference on Energy and Quality of Life: Policy Directions for the New Millennium, Vadodra, India, **29 November – 1 December 2001**. Further information from: *Prof. Rachel George, Conference Secretariat, Technical Backup Support Unit-NPIC, Faculty of Home Science, Maharaja Sayaji Rao University of Baroda, Vadodra 390002, India. Fax: 91-265-794864 E-mail: rachel_george@mail.com*

Third International Conference on Science, Mathematics and Technology Education: Making Science, Mathematics and Technology Accessible to All organized by Curtin University, Australia, and Rhodes University, South Africa, will be held in East London, South Africa, **16–19 January 2002**. Further information from: *Asst. Prof. D. Fisher, National Key Centre for School Science and Maths, Curtin University of Technology, GPO Box U1987, Perth WA, 6854, Australia. Fax: +61-8-92662503 E-mail: D.Fisher@smec.curtin.edu.au or Prof. T. Marsh, Director, East London Campus, Rhodes University, PO Box 7426, East London 5200, South Africa. E-mail: T.Marsh@ru.ac.za*

Third Regional Congress: Search for SEAMEO Young Scientists (SSYS' 2002) organized by the SEAMEO Regional Centre for Education in Science and Mathematics (RECSAM) will have as its theme: *Creating Intelligent Cities for the Harmonious Societies of the New Millennium* and will be held in Penang, Malaysia from **4–6 March 2002**. Further information from: *Director, SEAMEO RECSAM, Jalan Sultan Azlan Shah, 11700 Gelugor, Penang, Malaysia. Fax: 60-4-6572541 E-mail: director@recsam.edu.my <http://www.recsam.edu.my>*

The International Centre for Development oriented Research in Agriculture (ICRA) has announced its 21st ICRA Training programme in interdisciplinary team research for agricultural development to be held from **17 January – 25 July 2002** (English) and **21 January – 1 August 2002** (French). Possibilities for co-funding of candidates. Further information from: *ICRA, P.O. Box 88, 6700 AB Wageningen, Netherlands. Fax: (31)(0)317-427046 E-mail: icra@iac.agro.nl <http://icra.agropolis.fr>*

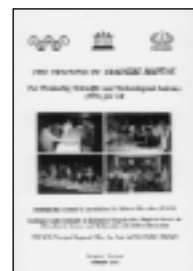
Publications



The Report of the National Workshop on **Scientific and Technological Literacy (STL) for All** (Delhi, India, 17-21 May 1999) as well as the resource materials that resulted from it are now available. The resource materials are presented in the form of teaching-learning modules for secondary school and use an integrated approach

to treat diverse topics of interest to developing countries such as: better soil management, getting rid of malaria, overuse of plastics, dealing with garbage. For copies contact: *Director, UNESCO/New Delhi, 8 Poorvi Marg, Vasant Vihar, New Delhi 110057, India. Fax: (91-11)614.3351 E-mail: uhndl@unesco.org*

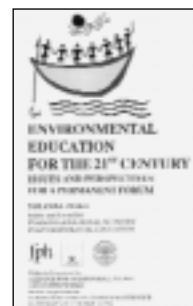
The Training of Teachers Manual for promoting Scientific and Technological Literacy for All (121 p., 2001) has been developed within the framework of *Project 2000+* and has been designed for the continuous professional development of science educators as well as teacher trainers and helpers. It treats notably: Conceptualization and operationalization of STL for all, Assessment of students and creating and implementing STL teaching materials. For copies contact: *Lucille C. Gregorio, Specialist in Science and Technology Education, UNESCO/Bangkok, PO Box 967, Prakanong Post Office, Bangkok 10110, Thailand. Fax: 66-2-3910866 E-mail: Bangkok@unesco.org*



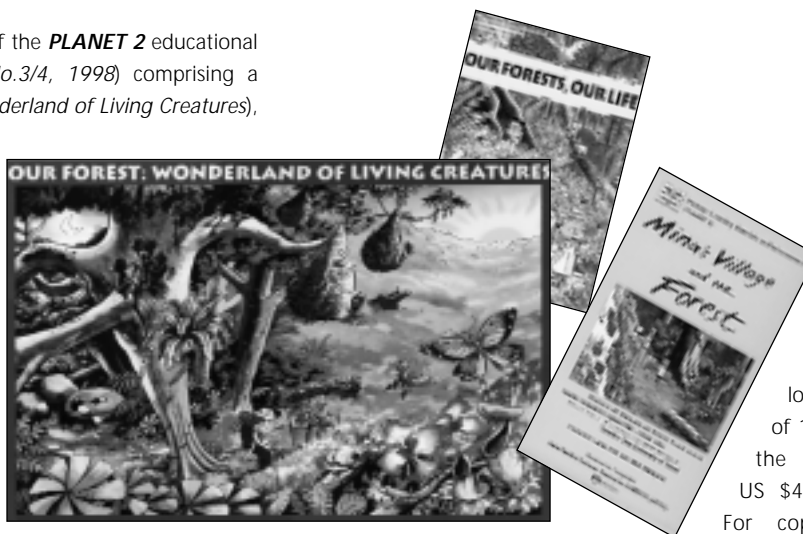
Folk Tales of Science: Curious stories, Amusing anecdotes, Quaint characters (187p., 2000) by Dilip Salwi is a compilation of little known facts or anecdotes about well-known scientists. The objective of the author, himself a scientist, is to 'humanize' both scientists and science by showing the everyday, human element in them which is generally (purposefully?) suppressed or ignored. Price: Rs 50 (+/- US \$1). Order from: *Rupa & Co.,*

7/16 Ansari road, Daryaganj, New Delhi-110 002, India. Fax: 91-11-327.7294 E-mail: rupa@ndb.vsnl.net.in http://www.rupaandco.com

Environmental Education for the 21st Century: Issues and perspectives for a permanent forum (215 p. 2000). Yolanda Ziaka, editor and co-author. This book is an outcome of the work undertaken by Polis, International Network in Environmental Education, from 1994-1999. Intended as "the starting point for an evolutionary process of reflection and debate" it contains over 60 articles of critical analysis of current challenges and trends in environmental education around the world. For copies contact: *Polis – International Network in Environmental Education, PO Box 4, 84100 Ermoupolis, Syros, Greece. Fax: 30-281-87800. E-mail: polis@otenet.gr http://www.echo.org/polis*



Forest Conservation is the theme of the **PLANET 2** educational package (v. **Connect**, vol. XXIII, No.3/4, 1998) comprising a 59 x 112 cm poster (*Our Forest: Wonderland of Living Creatures*), an 18-minute video cassette (*Mina's Village and the Forest*) and a 21p. booklet (*Our Forest, Our Life*). Produced by the Asia-Pacific Cultural Centre for UNESCO (ACCU) in collaboration with UNESCO/PROAP, the package is targeted at neo-literate adults in non-formal education programmes and children – both in- and out-of-school, of the Grade 4-8 group. Its objectives are information, awareness-raising, promoting positive and participatory attitudes towards the environment and developing literacy skills. The prototype English version will be distributed to literacy and environmental institutions in Asia and the Pacific



to be translated into local languages of 19 countries of the region. Price US \$45 + postage. For copies contact: *Literacy Promotion*

Division, Asia-Pacific Cultural Centre for UNESCO (ACCU), No. 6 Fukuromachi, Shinjuku-ku, Tokyo 162-8484, Japan. Fax: 81-3-3269.4510 E-mail: literacy@accu.or.jp



Glimpses of the Blue Caribbean: *Oceans, coasts and seas and how they shape us* (69 p., 2000) by Joy Rudder, is the 5th publication of the series: Coastal Region and Small Island papers. Informative and instructional in its conception, it is targeted at youth and the general public of the Caribbean region. It is divided into 5 sections entitled very simply: *Where are we? Who are we? What do we have? What can be done? What we want to happen* approaching the subject from a multi-disciplinary angle including the arts, sciences, culture, history, geography, economy, etc. For copies contact: *Environment and Development in Coastal Regions and in Small Islands (CSI)*, UNESCO, 4 rue Bonvin, 75015 Paris, France.

Environmental Education and Communication for a Sustainable World: *Handbook for International Practitioners* (138 p., 2000) edited by B. C. Day and M. C. Monroe was designed for environmental policy and programme designers and is based on the first five years of GreenCOM's work around the world. Its basic tenet is that technology cannot resolve environmental problems if socio-economic factors are not taken into consideration. It is presented in four sections: *Fundamental Concepts in Environmental Education and Communicating (EE&C); Planning EE&C Programs; Conduction EE&C Activities* and *Putting it All together*. The English version is available at: www.usaid.gov/environment/greencom and the Spanish version is due to be printed in the course of the year. Hard copies available for a small shipping charge from: *GreenCOM, 1255 23rd Str., NW, Washington, DC 200037, USA. Fax: 202-884.8997 E-mail: greencom@aed.org*



Cross-cultural evidence and perspectives on pupils interests, experiences and perceptions: *Background, Development and Selected Results.* (86 p., 2000) This is a documentation of the Science and Scientists study investigating interests, experiences and perceptions of children relevant for the learning of science. Some 30 researchers from 21 countries were



involved in this project in which around 9,300 children of 13 yrs took part. For further information contact: *Prof. Svein Sjøberg, Dept of Teacher Education and School Development, Faculty of Education, University of Oslo, PO Box 1099 Blindern, 0317 Oslo, Norway. E-mail: svein.sjoberg@ils.uio.no*

A Colloquium on Environment, Ethics, and Education (169 p., 1999, ed. Bob Jickling): Proceedings of a colloquium held in Whitehorse, Canada, 14-16 July 1995 to explore the themes: *What environmental ethics can do for teachers* and *What teachers can do for environmental ethics*; and



A Colloquium on The Future of Environmental Education in a Postmodern World (244 p. 2000, ed. A. Jarnet, B. Jickling, L. Sauvé, A. Wals and P. Clarkin), Proceedings (English/French) of an on-line colloquium held on 19 October 1998. For copies contact: *Arts and Science Division, Yukon College, Box 2799, Whitehorse, Yukon Y1A 5K4, Canada.*

Innodata Monographs is a series of case studies of selected innovative projects and approaches in education written by specialists in the relevant fields. They complement the data base of UNESCO's International Bureau of Education, INNODATA providing readers with more detailed information on selected innovations featured in the databank. Monograph No. 2 (40 p.) is written by P. Adey and is entitled *The science of thinking and science for thinking: a Cognitive Acceleration through Science Education (CASE)*. The case

studies as well as the reports on which they are based are available on the web at: www.ibe.unesco.org The monographs can also be obtained free of charge from: *PUB, IBE, PO Box 199, 1211 Geneva 20, Switzerland. E-mail: i.byron@ibe.unesco.org*

UNEP International Environmental Technology Centre (IETC) in cooperation with the International Lake Environment Committee Foundation (ILEC) and the Environment Agency of Japan is

producing several booklets, of which the first, entitled *Lakes and Reservoirs: Similarities, Differences and Importance*, is available in English and Japanese. This booklet looks at the characteristics of these water bodies and identifies their social and environmental values as well as providing information on ways to prevent their degradation. The second in the series under production, *Lakes and Reservoirs: A Flow of Water from the Mountains to the Sea*, examines different components of basins, such as rivers, lakes, reservoirs, ground water and wetlands, and gives information on their characteristics, functions and interrelationships with a section on the role of public participation in their protection. A third volume will look at the protection of freshwater bodies, considering public participation and awareness, environmental education, the role of the media and internet. For further information contact: *UNEP-IETC, 2-110 Ryokuchi Koen Tsurumi-ku, Osaka 538-0036, Japan. Fax: (81-6) 6915.0304 E-mail: ietc@unep.or.jp*

Education for Sustainability (564 p., 2000), Ed. G. de Haan, J. Mann, A-M. Reid. This volume contains 47 case studies on innovative European projects in education for sustainable education. They concern primary, secondary and tertiary level education as well as vocational training and "new fields of learning" from out-of-school experiences to various media. Though the major part of the cases relate to Germany, there are cases from Bulgaria, Estonia, Lithuania and Romania as well. Each study is presented in English, German or French with a trilingual abstract. Price SFR39. Order from: *Peter Lang AG, Europäischer Verlag der Wissenschaften, Jupiterstrasse 15, Postfach 277, CH3000 Bern 15, Switzerland. Tel: 41-31-9402121 Fax: 41-31-9402131 E-mail: publicity@peterland.com*

Time for Science Education: How teaching the History and Philosophy of Pendulum Motion can contribute to Science Literacy, by Michael R. Matthews (2000, 440 p.). Special discount rate: US \$39 (postage included). Order from: *Prof. Michael R. Matthews, School of Education, UNSW, Sydney 2052, Australia. E-mail: m.matthews@unsw.edu.au*

Science & Education is a bi-monthly journal associated with the International History, Philosophy & Science Teaching (IHP&ST) Group whose aim is to improve science education and science teacher preparation by having its theory, curriculum and pedagogy informed by the history and philosophy of science. For conditions of subscription contact: *Prof. Michael R. Matthews (address above)*.

Canadian Journal of Science, Mathematics & Technology Education is the first academic journal in this field published in Canada. This journal is an international forum for the publication of original articles written in a variety of styles including research investigations, critical reviews, policy perspectives and position papers. For further information contact: *University of Toronto Press-Journals, 5201 Dufferin Street, North York, ON Canada M3H 5T8 Fax: 416-667.7881 E-mail: journals@utpress.utoronto.ca*

Education relative à l'environnement – regards – recherche – réflexions is a new research journal devoted to environmental education which appears annually. The fruit of a partnership between

Belgium, Canada, France and Mali, it seeks to disseminate research in EE to French language speakers. The first volume focuses on Research in EE, the second on Evaluation whereas the third, due to appear in the current year will be devoted to Partnerships and New Audiences for EE and the fourth planned for 2002 to The issue of 'development' in EE. **In French.** Annual subscription: Can \$25/130 FF/800 BeF. Further information from: *Marie-Claire Domasik, Fondation Universitaire Luxembourgeoise, 185 Avenue de Longwy, 6700 Arlon, Belgium. Fax: +32-63.230.897 E-mail: domasik@ful.ac.be* or *Lucie Sauvé/Renée Brunelle, Département des sciences de l'éducation, Université du Québec à Montréal, CP 8888, Suc. Centre-ville, Montréal, Québec, Canada H3C 3P8 Fax: 1(514)987-4608 E-mail: ere-uqam@er.uqam.ca*

Work in Progress, Vol. 16, No.2, Spring 2001, is devoted to the United Nations University (UNU) Environment and Sustainable Development Programme, containing notably twelve articles on a variety of research projects and issues ranging from the sustainable development and use of natural resources to effective means of coping with pollution and climate change. For copies contact: *Public Affairs Section, United Nations University, 53-70, Jingumae 5-chome, Shibuya-ku, Tokyo 150-8925, Japan. Fax: 81-3-3499.2828. E-mail: mbox@hq.unu.edu http://www.unu.edu/*

El rincón de la Ciencia (Science corner) is an electronic publication of the I.E.S. Victoria Kent for students, teachers and all those interested in science. It is designed and managed by teachers, originally targeting secondary level students but ultimately open to all. Contains a number of articles on science themes, practical activities, book reviews, interesting links classified according to theme, as well as queries on science issues/problems to which answers are provided. The latest issue, *No. 11, April 2001*, focuses on *2000: Year of Mathematics. In Spanish. http://pagina.de/rinconciencia*

Industry and Environment, Vol. 23, No.4, Oct-Dec 2000, is devoted to Sustainable Mobility. It examines notably the role that all forms of transport have to play to arrive at this goal as well as giving examples of policy measures, voluntary agreements, design advances and other initiatives that are successfully contributing to it. Annual subscription: US \$60 (Special conditions for government, educational and non-profit organizations from developing countries) Contact: *UNEP DTIE, 39-43, quai André Citroën, 75739 Paris Cedex 15, France. Fax: +33-1-44.37.14.74 E-mail: unep.tie@unep.fr*

Symbioses, No. 50, mars – mai 2001, focuses on Landscapes, with experiences, activities, useful addresses, tools and 'matter for reflection' on the topic. **In French.** Annual subscription 400 BF. Contact: *Réseau Idée, 47 rue des Deux Eglises, 1000 Brussels, Belgium. Fax: 02-286.95.79 E-mail: symbioses@reseau-idee.be*

The theme of **IAEA Bulletin, vol. 43, No.1, 2001**, is Education and Training in nuclear-related matters such as safety, protection, waste disposal and installations. For copies contact: *IAEA, Division of Public Information, PO Box 100, Wagramerstrasse 5, A-1400 Vienna, Austria. Fax: (43-1)2600-29610 E-mail: worldatom@iaea.org http://www.iaea.org/worldatom/*



African Congress on Girls' Science Education

Zambia, 18-22 June 2001

This Congress has been organized within the framework of two UNESCO Special Projects: on Scientific, Technical and Vocational Education of Girls in Africa and on Women, Science and Technology in collaboration with a number of partners including the FEMSA (Female Education in Mathematics and Science in Africa) and AESCO (Association d'Aide à l'Équipement Scolaire et Culturel) Association and support from the Royal Ministry of Foreign Affairs of Norway.

It has been conceived as a follow-up to both the World Conference on Science (Budapest, 1999) and the World Education Forum (Dakar, 2000) as well as part of UNESCO's efforts in eliminating gender disparity in school education by 2005.

The meeting will focus on the issue that although the concepts and principles of science and technology education are universal, the content as well as the examples and illustrations used in many science-related curricula and educational materials tend to build more on the experiences of boys and ignore those of girls. The meeting will discuss the use of science and technology encountered in daily life in order to motivate girls for science education and science-related careers. Taking advantage of the first total solar eclipse of the new millennium, the meeting will focus particularly on astronomy as an entry-point to mathematics and physics, two science subjects in which girls are most often under-represented.

The initiative has been the focus of great interest both from UNESCO's Member States as well as other UN agencies. For further information contact: *Anna-Maria Barthès-Hoffmann* (address on last page)

Viewpoint

Dear Sir/Madam,

I was really impressed with your magazine (Vol. V, No.1, 2000) when I read it. Most of the contents were very interesting and educational.

I feel that it is important, especially the education sector, for teachers to share ideas or information concerning the profession or subject matters with other teachers, organizations or individuals. Education should not be confined to just textbooks. The world is changing rapidly and the education sector needs to respond correspondingly. Here in the Solomon Islands we seem to be lagging behind in development, technology and what is taking place throughout the world. When I hear on the radio of what is happening in the scientific and environmental spheres in the world, and of which most of my countrymen are unaware, I have the impression that we are living on another planet! As a trainee teacher and in the context of the situation in my country, I feel that it is up to the teacher to take the initiative in learning things on his subject matter and not just relying on the Educational Authorities or the National Government.

I would thus highly appreciate it if you could assist me in contacting other teachers, teacher organizations dealing with science subjects. Thank you for your assistance and understanding.

Yours sincerely,

Kasibaniani Qölöni J. C/-Moses Paralea, Goldie College, P.O. Box 81, Munda, Western Province, Solomon Islands.

CONNECT is also available on the Science and Technology Education homepage:
<http://www.unesco.org/education/educprog/ste/index.html>

Due to staff shortage, it is no longer possible to attend to requests for mailing list changes without the SUBSCRIPTION NUMBER (top right hand corner of address label).

Unless otherwise stated, all correspondence concerning *Connect* should be addressed to:
Editor, *Connect*, UNESCO/ED/STV/STE, 7, place de Fontenoy, 75352 Paris Cedex 07, France. Fax: (33-1) 45.68.56.26
E-mail: d.bhagwut@unesco.org
N.B. Replies to unsolicited correspondence cannot be ensured

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