WORLD ASSOCIATION OF SOIL & WATER CONSERVATION (WASWC)

NEWSLETTER

Reporting global SWC news quarterly since 1983

In English, Spanish, French, Chinese, Portuguese, Bahasa, Russian, Vietnamese, Arabic, Thai

VOLUME 24, NUMBER 3 (JULY – SEPTEMBER 2008)

Conserving Soil and Water Worldwide – Join WASWC

WASWC Vision: A world in which all soil and water resources are used in a productive, sustainable & ecologically sound manner.
WASWC Mission: To promote worldwide the application of wise soil and water management practices that will improve and safeguard the quality of land and water resources so that they continue to meet the needs of agriculture, society and nature.

WASWC Secretariat: Monitoring Center for Soil and Water Conservation, Ministry of Water Resources, Beijing, PR China, sglu@mwr.gov.cn, http://www.cnscm.org
Photo websites: http://community.webshots.com/user/waswc and http://community.webshots.com/user/waswc1
WASWC Japan: www.waswc.org (for J&P of WASWC)
WASWC China: http://waswc.soil.gd.cn (for Newsletter)

Publishing Partner: Science Publisher, Inc., P.O. 699 Enfield, NH 03748, USA. info@scipub.net, www.scipub.net
Newsletter Composing, Layout and Sending: Punjab Agricultural University, India, WASWC Thailand and NRM Program, AIT, Bangkok, Thailand. **Advisors:** William C. Moldenhauer, David W. Sanders and Samran Sombatpanit

In this issue

The WASWC Newsletter seeks to keep conservationists worldwide informed of new developments in the field of soil and water conservation and land management issues. Please send editorial contributions to the editor at sskukal@rediffmail.com

President's message

Dear members of World Association of Soil and Water Conservation, friends and colleagues

In this message I wish to present you current work of our Association. Regarding better organization of activities the World Association of Soil and Water Conservation has reorganized its structure and has expanded membership to cover more than one hundred countries, with several thousand active soil and water conservationists of all membership categories communicating with Association at present. We increased the number of councilors from nine up to twenty three, each of them dealing with the issue such as secretary, membership, editing (newsletter, journal and proceedings, special publications), awards, translating newsletter to many languages, special subject matters (law and policy issues, no-tillage), etc. In order to improve the role of the Association and to contribute strongly to the WASWC activities we are in the running process of transforming National Representatives to Vice Presidents of WASWC for the period up to December 2010, pending their own willingness. Since we are all doing activities in WASWC on a voluntary basis and bearing in mind that all of us are quite busy with our academic and professional works, I take this opportunity to thank very much all of you who have accepted this important role.

One of the main activities of WASWC at present, besides the others, is organizing congresses, conferences, workshops, symposia and seminars. We are currently deliberating about the Guidelines for Successful Meetings for organizing technical and scientific meetings, both local and international, and the joint name of the series of meetings to be held by WASWC and collaborators. We will report our findings to you in the next issue of WASWC Newsletter.

Presenting awards of WASWC every year at different levels is an important task of WASWC and this is being led by the Awards Committee of WASWC, chaired by Prof. Stanimir Kostanovich. One of the main awards is the prestigious Norman Hudson Memorial Award. This Committee had made the decision about the NH Award for 2008. We always use an opportunity to present the NH Award at certain important meeting. During the International Conference on Research for Development (ICRD), held at the University of Berne in Switzerland on July 2-4, 2008 I presented the NH Award for 2008 to Prof. Michael Stocking for his outstanding contributions to soils investigations, land management, agricultural biodiversity and the relationship between land degradation and vegetation productivity worldwide. At the same venue I also presented the NH Award for 2007 to Prof. Hans Hurni for his outstanding contribution to soil and water conservation and the successful WOCAT Programme for documenting sustainable land management worldwide that he had initiated since 1992. I had delayed the presentation of the NH Award for 2007 as I wished to present it to Hans personally, which was not possible in 2007.

I request all WASWC members to actively participate in various works of WASWC and especially to contribute to the Newsletter and Journal/Proceedings. Let us pledge to make this association grow healthily now and in the future so that we may collectively preserve the national resources and properly serve the mankind.

Miodrag Zlatic
Prof. Miodrag Zlatic, DSc, President of the World Association of Soil and Water Conservation
Faculty of Forestry, Belgrade University, Kneza Viseslava 1, 11090 Belgrade, Serbia
Phone: +381 11 3553 122, Fax: +381 11 2545 485, miodrag.zla@sbb.rs, mizlatic@yahoo.com

EDITOR'S NOTE

Dear Friends,

In my last newsletter, I had mentioned about my concern for the devastating floods in Eastern part of India in which thousands of people perished and millions lost their households. I tried to portray the picture of this devastation by some figures and photographs. I, however, was surprised at not getting any response to my concerns from my fellow WASWC members. Should I believe that our members are so busy that they do not have any time for reading our newsletter or they do not feel concerned about such disasters, which I think is of remote possibility. I thus for the time being should believe that the newsletter is not being read by our members may be due to shortage of time. I need not mention here the benefits which all the members of WASWC can get when you respond to some of the news items of your interest. How can we improve upon the same if we do not get your feedback. I must mention here that to prepare a newsletter a lot of hard work and precious time is expended and if after doing so we learn that not many people have read it pinches us as we feel that our hard work and valuable time have gone wasted. Also if you read and do not give your feedback/response, how can we know that you have gone through it?

Friends, I feel that this newsletter is a platform for all the soil and water conservationists to interact with each other so that non-technical persons may get benefitted from your interactions and experiences. As a newspaper provides you with a picture of a city, country, region or world, so does a newsletter provide you with a picture of soil and water conservation (SWC) activities worldwide. We still have to go a long way in serving the society and this newsletter serves as a binding agent in joining the scientists so as to serve the mankind.

So friends, I consider it my duty to request all of you to please spare some of your valuable time to go through this newsletter and let us know about your views on what we write or what the other people have been doing about SWC. Also write us about the SWC activities taking place in your region so that others may get benefitted from your experiences.

Friends, I have decided to start a debate on the topic "Indigenous technology – Should we adopt it or ignore it" in our newsletter under the column 'MEMBERS' FORUM'. I invite all of you to take part in the debate which I wish may continue till we need some logic conclusion. Some of my comments on this topic, and why I want a debate on it, are explained in the members' forum. I am expecting a good debate on it. So please help me in fulfilling my expectations.

SURINDER S KUKAL
Professor of Soil Conservation
Department of Soils
Punjab Agricultural University, Ludhiana, India
Phone: 91-98727-77626; sskukal@rediffmail.com

AWARDS

NORMAN HUDSON MEMORIAL AWARD for 2007 and 2008

Prof. Hans Hurni, the recipient of the Norman Hudson Memorial Award of WASWC for 2007

- *Miodrag Zlatic,* miodrag.zla@sbb.rs

Perhaps the most compelling reason to recommend Hans Hurni for the Norman Hudson memorial award is the least to do with soil conservation *per se*. Of the professional and technical reasons, more later, but - which of you were there when Hans asked the plenary session at the ISCO conference in Bonn in 1996: "how many social scientists are present?" A mere handful stood up. President of the World Association of WASWC at the time, Hans highlighted a fundamental weakness of our profession. And that is our obsession with techniques to save the soil – and our ignorance of the fact that the *land users* are central to any solutions.

With his effortless charm and dignified authority, Hans Hurni has helped change the face of soil and water conservation from a myopic focus on soil loss and technology to a broad based holistic overview of land management. His booklet written for the ISCO '96, entitled "Precious Earth: From Soil and Water Conservation to Sustainable Land Management", represents a classic in the topic of SWC and SLM.

Hans' career has been exemplary. Born in December 1950 in Switzerland, he gained his MSc (Geography) at the University of Berne in 1975. He lived in Ethiopia for 10 years where he worked for the WWF and where he also did his field studies for his PhD, which he completed in 1980. He has remained at the University of Berne, becoming a co-director of the highly respected Centre for Development and Environment in 1987. He was appointed Professor in 1997. Amongst his many international positions, Hans was appointed President of the World Association of Soil and Water Conservation in 1991, a position he held until 1997.

It was during his presidency of WASWC that Hans came up with the concept of WOCAT – the World Overview of Conservation Approaches and Technologies. His vision for WOCAT was that it should document success in sustainable land management at a time when the world was fixated on "desertification", "marching deserts" and calamity scenarios. The GLASOD map of soil degradation had just been published. Hans' clarion call was to wake us up to examples of good land management that exist all over the world. It was just late in 2006 that WOCAT has produced its first major output – the book "W*here the Land is Greener*". Hans must be proud of what he initiated over one decade ago.

Amongst his other international positions – where he has wielded significant influence – Hans has been a member of the IBSRAM board since 1994; a board member of ISCO since 1988; a member of the World Commission on Protected Areas (WCPA) of IUCN since 1997; and the chair of the IUSS Working Group on the proposed Soil Convention. Furthermore he holds editorial positions with respect to various academic journals: Land Husbandry,

the International Journal of Soil and Water Conservation; AMBIO, the journal of the human environment; and Mountain Research and Development – of which he is the Editor-in-Chief. His special professional connection was to Ethiopia. From his early experiences as park warden in the Simen National Park, to the establishment of the nationwide Soil Conservation Research Project, Hans has been a friend of Ethiopia.

Hans' influence has been truly international, and his contribution to the worldwide cause of sustainable land management is outstanding. Hans Hurni is worthy of the prestigious Norman Hudson Memorial Award.

Prof. Michael Stocking, the recipient of the Norman Hudson Memorial Award of WASWC for 2008 - *David Sanders,* dsanders38@btinternet.com

Prof. Stocking has an outstanding academic record, with an Honours Degree from Oxford University and a MPhil in soil erosion and a PhD in gully forms and processes from the University of London. Michael Stocking is Professor of Natural Resources Development and immediate past Dean of the School of Development Studies, University of East Anglia, Norwich, United Kingdom. Since 1969 he has been involved in SWC, tropical agricultural development, land resources assessment and conservation of biodiversity. He has made a substantial contribution towards the sustainable use of natural resources, developing conservation practices adapted to local socioeconomic and farming conditions. Prof. Stocking has made an outstanding contribution to soils investigations, land management, agricultural biodiversity and the relationship between land degradation and vegetation productivity. This work has taken him to numerous countries in sub-Saharan Africa, South and South-east Asia, and South America.

Prof. Stocking is currently Vice-Chair of the Scientific and Technical Advisory panel of the Global Environment Facility (GEF). He is responsible for scientific advice on the "land degradation" focal area of the GEF and the Operation Program (No. 15) on "sustainable land management". He has been a consultant advisor to many international agencies, including FAO, UNDP, UNEP, the World Bank, ADB, IUCN, WWF-UK, DFID, DANIDA, Sida and NORAD. As a member of advisory and management boards to DFID, the United Nations University and the CGIAR, he is involved closely with international development aid and the promotion of research with developing countries. He chairs the Scientific Advisory Committee to CIAT-TSBF, as well as the GEF-UNEP project on below ground biodiversity. He was the Associate Scientific Coordinator for the first GEF multinational project on agricultural biodiversity: the *People, Land management and Environmental Change – PLEC* (1996-2002) project. He was the author and senior consultant for a number of large GEF projects, including the AO-UNEP *Land Degradation and Assessment for Drylands* (2004-2010) and the World Bank *International Assessment of Agricultural Science and Technology for Development* (2005-2007). Until his appointment as STAP Vice-Chair, he was a regular STAP Roster reviewer of GEF projects. Training has been a major part of his work and he has been involved in courses in agriculture, resource assessment and management, land degradation control and sustainable rural livelihoods.

Prof. Stocking is the author of over 130 scientific papers, book chapters and reports, including seven books on various aspects of the environment and development. His book, entitled *Handbook for the Field Assessment of land Degradation,* is published in English and Spanish and an Arabic version is in preparation. His two most recent books are *Agricultural Biodiversity of Smallholder Farms in East Africa* and *Renewable Natural Resources Management for Mountain Communities*. His 2003 review paper in *Science* on the prospects for tropical soils and food security for the next 50 years is widely cited.

These are the hard facts of his career but what they do not reveal is the high regard and respect in which he is held by his peers. I know Prof. Stocking personally; I made extensive use of his services during the 1980s and early 1990s, when I headed FAO's soil conservation unit. The most important work that he did for FAO was to act as leading consultant on a program to stimulate research into the effects of soil erosion on soil productivity. He performed this task with great distinction, helping to develop the methodology for the research and then training staff and overseeing the work in a number of African, Asian and South American countries. During the time that he worked for FAO, I was constantly impressed with his intellectual ability, dedication to the tasks that he was given, his scientific knowledge and his great ability to communicate with other scientists, both verbally and in writing. Thanks to his efforts, much more is now known about the effects of erosion on productivity and its economics.

Prof. Stocking has been one of the major contributors to the ISCO since its inception and has contributed a number of important papers and presentations. Prof. Michael Stocking has been one of the outstanding figures in SWC internationally for the last 35 years and, thanks to his work, our understanding of this subject has increased greatly. He has trained many leading modern day workers in our field and is highly regarded by his peers. Prof. Stocking is one of the WASWC's most distinguished members and worthy for the Norman Hudson Award.

MEMBERS' FORUM

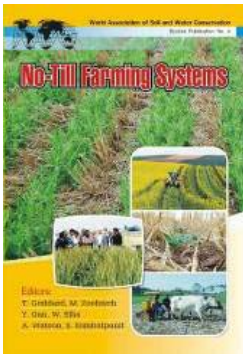
The Indigenous Technical Knowledge (ITK) in Soil and Water Conservation

In the present day scenario the soil and water conservation techniques developed on scientific lines don't find favor with most of the farmers in adopting them. The farmers particularly in third world countries are not very good adopters. But I personally feel that the farmers themselves are very good scientists as they know what is good or bad for them. For tackling the hardships in soil and water conservation, they have their own set of techniques called indigenous technical knowledge (ITK). The ITK is the technology generated through hit and trial and personal experiences over the years and is passed through word of mouth from one generation to another and is not documented on the paper. Passing on an altogether new technology to the farmers may not find favor with them for adopting the same. Instead of this, if an existing ITK is tested, improved on scientific lines and given back to the farmers will have many times more chances of being adopted by the farmers.

Friends, these are my views on ITK which need to be debated at length. In addition, the indigenous techniques in your knowledge if shared with the members of WASWC will go a long way in documenting these techniques for the benefit of farmers of similar climates and regions. So please come forward and share your views on this platform that has passed through more than 50,000 hands at present and is expected to reach many more.

Surinder S Kukal, *India*

What members say about No-Till Farming Systems book



080826
Dear Samran,
This is just to inform you that I have received the book today. Thank you so much for this gift! I'll carefully read it.
I have become a fair promoter of no-till and I don't miss an opportunity to explain to people around me about all the benefits that one can get out of it.
Again, thanks for your kind gift.
Sebastien Haye sebastien.haye@epfl.ch

080525
Dear Samran,
Thanks for the book which arrived a couple of days ago. From a quick glance, it appears to be a very good piece of work and one the WASWC can be proud of. Well done!
David Sanders dsanders38@btinternet.com

080513
Dear Samran,
I have received the No-Till books in Spain. Great job!
Emilio Gonzalez, European Conservation Agriculture Federation (ECAF), Spain. egonzalez@aeac-sv.org

080513
Dear Samran,
I am writing to thank you for the copy of No-Till book that you kindly sent me. It is packed with interesting material, and looks very good; I really think it is very good value, and am passing my copy around the School here in the hope that they will order it for the library. It is a very timely publication, given the growing recognition that enhancing soil organic matter is both an adaptation and mitigation tactic for climate change.
Mike Robbins, University of East Anglia, Norwich, UK. (Author of SPII, *Carbon Trading, Agriculture and Poverty*)
mike.robbins@uea.ac.uk

080512
Dear Samran:
Again I congratulates for your job. The CD and the book are just an extremely fine and useful job. Please do get my kindest regards and congratulations for the job you keep doing all the time.
Roberto Peiretti, AAPRESID, Rosario, Argentina. sdrob@idi.com.ar

080506
Dear Samran,

Greetings from 'Down Under'.
I received your book on "No-Till Farming Systems' today and what a wonderful publication. Please accept my congratulations to you and you co-authors for not only the research but the way you have put this information together. A great reference for the worldwide farming community!
Doug Wimble, Managing Director, Spraygrass Landscapes Australia Pty Ltd, Riverstone, Australia. dougwimble@spraygrass.com.au, www.spraygrass.com.au

080422
Dear Samran:
No Till book received with thanks and congratulations on a job well done. Very useful information.
Tom Dahmer, Wildlife Biologist/Deputy Team Leader, ADB-GEF Sanjiang Plain Wetland Protection Project, Forestry Department of Heilongjiang Province, No. 10 Hengshan Road, Nangang District, Harbin, China. ecosys@pacific.net.hk

080421
Dear Samran:
I want to let you know that I have received your book "No Till Farming System". The book looks great and for sure should be a good help for any one who wants to learn about no tillage around the world.
Carlos Crovetto, Concepción, Chile. crovetto@entelchile.net

080417
Dear Khun Samran:
Thanks for sending me a copy of the fine book on no-till farming systems and look forward to our continued collaboration.
Jeff McNeeley, Chief Scientist, IUCN, Gland, Switzerland. JAM@iucn.org

080417
Dear Dr. Sombatpanit,
We just received a package with 30 copies of the volume. I suppose two or three other packages are on their way to complete the 100 volumes. Looking briefly at the volume, I must say it looks an excellent one. You have succeeded in putting together papers from most countries and institutes / universities with results on conservation tillage, to have all these papers well correlated between them, and as such to give to lecturers a complete and up-to-date status throughout the world of this very actual problem of interest for soil scientists, environment people and agronomists. I am very happy you have accepted my contribution within this book.
Thank you for your assistance, and looking forward for further cooperation.
Andrei Canarache, National Research and Development Institute for Soil Science, Agrochemistry and Environmental Protection, Bucharest, Romania. andrei.canarache@yahoo.com

080414
Dear Samran,
Today we obtained the No-till book – GREAT WORK!!!!!!!!!! CONGRATULATIONS! Nice, I have a lot to read!!!!!!
I just would like to ask when approximately we can obtain the other copies. In total we ordered 50 copies with CD. I am asking because when people see this book they also want to have it. Thank you and congratulations again.
Beata Houskova, Institute for Environment & Sustainability, European Commission - DG JRC, I-21027 Ispra (VA) Italy. http://eusoils.jrc.ec.europa.eu/, beata.houskova@jrc.it

080407
Dear Samran,
The no-till books, all 40 copies, arrived last week. So your staff worked very well.
Birkás Márta, Szent Istvan University Dept. of Soil Management, Gödöllõ 2103, Hungary.
http://www.mkk.szie.hu/dep/fmtt/english.htm, Birkas.Marta@mkk.szie.hu

080404
Samran,
I received my book today, it is very well done, and the CD is something else. That is a marvelous work.
John M. Laflen (WASWC Treasurer), Buffalo Center IA 50424, USA. laflen@wctatel.net

080402
Hello Samran,

We did receive the shipment of books from you several weeks ago. I do thank you for that shipment. I haven't had time to read the whole edition but I have gone through several of the chapters and it is a very good book.
Lindsay Coulthard, Manitoba Zero Till Research Association (MZTRA), Manitoba – Canada, mztra@mts.net

080328
Hello Samran,
I received my copies of the no-till book. They look great because they were designed to look like pocketbooks - not a text book. Thanks for sending me the final version of the CD.
Manuel Reyes, North Carolina Agricultural and Technical State University. Greensboro, NC, USA.
reyes@ncat.edu

080327
Dear Samran,
Thank you so much the 70 copies have all arrived in good condition.
We have already given some out and the first response was really very positive.
I have given copies to various people in China and abroad. Then I gave 2 copies to a potential distributor and am also to give two copies to "our" publishing house, the Popular Science Press, who would publish it – but not carry the risk and would like to be prepaid – yet help with sales and distribution. The next step would be to make a Chinese translation. But first we need to see where the funds for that would come from.
Some feedback was also that through the nature of the book being a collection of articles some information is repeated. On the other hand it allows to read articles of interest first and so find one's own way through the various angles on no-till farming.
Others commented very startled: "But why did people ever start ploughing?"
Kosima, EEMP, Beijing, China. www.eempc.org, kosima@mac.com

080326
Dear Samran,
I received the book "No Till Farming Systems" with the CD last week. Thank you very very much.
I read about the soil museum recently finished in your country. I wish I could visit Thailand and take a look on your soil museum. Thank you again for the very informative book.
Concepcion Payapaya, Bohol – Philippines. cbpayapaya@yahoo.com

… and about No-Till CD

April 6, 2008
No-Till CD arrived safely, many good items there, very useful at hand, thanks.
Arie Shahar, Israel, a-shahar@inter.net.il

April 9, 2008
Hello! I received the 25th anniversary CD edition. Thank you very very much. I enjoy viewing the contents of the CD, it's very informative.
Concepcion Payapaya, Philippines, cbpayapaya@yahoo.com

April 17, 2008
Dear Samran,
Thank you for the CD-ROM which has arrived 2 days ago. I like it, because it has a lot of diverse information around no-till. I will make copies and send them to the agricultural departments in the country.
Michael Zoebisch, Ethiopia, Michael.Zoebisch@gtz.de

No-Till Farming Systems book, with CD, is available for sale. Send your order to Samran Sombatpanit at sombatpanit@yahoo.com. Read more information from http://homepage2.nifty.com/waswc/201_publications.htm

ASSOCIATION NEWS

▲ Winner of Photo Competition 13 http://good-times.webshots.com/album/560965420YNzztn?start=60

There are 118 photos sent from Prof. Marta Birkas DSc, head of department, Szent Istvan University, Dept. of Soil Management, Institute of Crop Production Science, H-2103 Gödölö, Hungary. Tel: +36-28-522-000/1674; mobile: +36-20-4283-425, Birkas.Marta@mkk.szie.hu, http://www.mkk.szie.hu/dep/fmtt/english.htm, http://mtt.szie.hu
We'll announce the three winning photos in the next issue.

▲ What's new on our website?

- **CONFERENCE ABSTRACTS: International Symposium "Preventing and Fighting Hydrological Disasters",** Timisoara, Romania, June 29-July 1, 2006 (posted 081020) http://waswc.soil.gd.cn/conferences.html
- **POSTER:** Farmers' Participation in Water Conservation Program in NE Thailand, by Rungsun Im-Erb, Kasem Thongpan and Samran Sombatpanit (2008)
- **MEMBERS' VOICES**
  - Voice from Nonoy Oplas, Pangasinan, The Philippines
  - Voice from Vir Singh, Uttarakhand, India
  - Voice from Nahid Elbezzaz, Rabat, Morocco
- **Travelogue: My China Diary II, Part 1** by Samran Sombatpanit http://waswc.soil.gd.cn/TRAVELOGUES.html

▲ New Officers

- **Mauricio Azero,** WASWC Vice President for Bolivia mazero@ucbcba.edu.bo

Mauricio Azero was born in Buenos Aires, Argentina, with Bolivian parents, on April 8, 1966. He graduated in Agricultural Engineering at Universidad Nacional del Sur, Argentina, in 1991, specializing in Soil Science. He made post-graduate courses in Rural Economy at Universidade Federal de Vicosa, Brasil (1994), followed by a MSc in Agrarian Economy at Pontificia Universidad Católica de Chile, Chile (1995-1997), and another MSc in Environmental Engineering at Universidad Mayor de San Simón, Bolivia. Mr. Azero lectures courses in Soil Science and Soil Management since 1998, at the Faculty of Engineering, Department of Environmental Engineering, Universidad Católica Boliviana San Pablo. Since 2003, Mr. Azero is Head of the Department. His research interests are Soil Erosion and Conservation, Soil Carbon Balance, Environmental studies and Urban Agriculture. He is a member of Soil Science Society of Bolivia and World Association of Soil and Water Conservation. Mr. Azero's hobbies are gardening, travelling and reading. He and his wife Daniela have two children, Sabrina and Luciano.

- **Su-Chin Chen,** Professor and Chairman, Department of Soil and Water Conservation, National Chung-Hsing University, Taichung, 402, TAIWAN (Chinese Taipei). Tel: +886-4-2285-1558; Fax: +886-4-2285-3967, scchen@nchu.edu.tw

Professor Chen has studied in river morphology, sediment transport, debris flow and mountain area disaster mitigation and has served as chairman in the Department of Soil and Water Conservation, National Chung Hsing University. He got PhD from Department of Civil Engineering, National Taiwan University, 1990. He had been the visiting scholar in UC Berkeley, USA and Univ. of Trento, Italy. Professor Chen also was the Editor-in-Chief of Journal of Chinese Soil and Water Conservation from 1992-2006. He has authored more than 100 scientific journal papers, mostly in Chinese, and got the Outstanding Research Award from National Chung Hsing University and Chinese Soil and Water Conservation Society.

▲ Obituary - An End of a Chapter for ISSS

A veteran soil scientist of international repute, Dr. G.S. Sekhon died last week at the age of 76. With his death a chapter of soil science research has been closed. He remained Professor and Head of Department at Punjab Agricultural University, Ludhiana, Director of the Indian Potash Research Institute, New Delhi and President of the Indian Society of Soil Science. An able scientist, teacher, and administrator who worked actively till his last day for the Indian Society of Soil Science, he will always be remembered not only among the Indian soil scientists but also at the international level. In fact he is one of the founders of Soil Science in India and did a pioneering work for the establishment of the Indian Society of Soil Science and nurtured it till his last. He is survived by a son and a daughter. With his death, a chapter in the history of Indian Society of Soil Science has ended.

MEMBERS' CONTRIBUTIONS

▲ Conversion of grazing land to fruit and fodder plots

– Иваэнамулани заминн чарогох ба богот **(Tajikistan)**

The slopes of around 30% are used commonly in Varzob valley of Tajikistan and are highly overgrazed leading to a reduction of vegetative cover, soil compaction and severe sheet and rill erosion. An innovative farmer began to set up half a hectare vineyard fruit plot in 1982 with intensive grass fodder production for cut-and-carry and separate section above for hay making. Within a period of 5 years, an area of severe water erosion was converted into sustainable use with fodder and fruit flourishing without any soil erosion. He started the process with 1.5 m high fencing out of scrap metal from machinery depot, to keep out the animals. He constructed narrow and back-slope terraces to harvest and hold runoff water, each with a water retention ditch along the contour. Initially when the terraces did not harvest sufficient runoff water, he gave supplemental irrigation by donkeys in old inner tubes of car tires. He applied to the terraces with manure collected from high pastures during summers, for improving the soil fertility.

His most valuable fruits are grapes, apricots, almonds and plums. While establishing these fruit trees, he considered 40% survival rate as reasonable. The fruit harvested is mainly used for his home consumption except during the good years when grapes and apricot are sold in the market. The pruned branches from vines are collected and used as firewood. Though the establishment of such a system was labor-intensive, but within 5-6 years the system has become self-sustaining and the productivity of the land has improved several times. This system is becoming common with the other farmers of the region.

Ed.: Friends, this success story from Tajikistan may be applicable to any site with similar land characteristics.

▲ My China Diary II, Part 1 (The account from Dr. Samran Sombatpanit's trip to attend the Bio- and Ecoengineering Conference in Beijing in July 2008 was written as a diary, the full version of which has now been posted on the webpage http://waswc.soil.gd.cn/TRAVELOGUES.html.)

July 14, 2008. Today the conference will start. The conference venue is just a few minutes away. The National Center for International Research in LIAMA (Sino-French Laboratory for Computer Science, Automation, and Applied Mathematics) (or Institute of Automation) that belongs to the Chinese Academy of Sciences is on the 11th and 12th floors of a beautiful building (see below) and the room for our bio- and eco-engineering meeting is on the 13th floor (Chinese have no problem with number 13), which is on the top level. This was the first time I would meet with Alexia Stokes alexiastokes@yahoo.fr, so it was an exciting moment when we met this morning. Actually we had had a continued correspondence during the past 4 years since the 1st meeting of eco-engineering in Thessaloniki, Greece, in 2004 and we found we had a common interest in using plants to stabilize slopes, especially in non-agricultural areas, which is cheaper while it is much more visual-friendly.

Foreign delegates formed a big majority of participants today, while Chinese colleagues were a small minority. This would be opposite if it were to take place in Thailand. I have met a number of foreign delegates before, e.g. Alex Watson from New Zealand and Doug Wimble from Australia since the Bioengineering conference in Manila in 1999, Gernot Fiebiger of Austria since the Debris Flow conference in Taipei in October last year, and Jean Poesen at the BORASSUS conference in Chiang Mai, Thailand early this year. Reunion with friends has made the friendship firmer and meeting new friends would make something new to happen!

The opening of the conference: Alexia has worked with her Chinese colleagues at this institute for over 2 years and this conference seems to be the project-ending meeting. After she made a short introduction about the conference, Director Tianzi Jiang gave an opening speech, to be followed by Doug Wimble who talked on behalf of IECA (International Erosion Control Association). Gernot gave a speech on IUFRO's behalf.

From left: *The modern building that houses the National Center for International Research in LIAMA (Sino-French Laboratory for Computer Science, Automation, and Applied Mathematics) (or Institute of Automation) that belongs to the Chinese Academy of Sciences is on the 11th and 12th floors and the spacious room for our Bio- and Eco-engineering meeting is on the 13th floor (top floor).*

I then gave a speech on WASWC's role in promoting soil and water conservation worldwide, especially by using plants, and followed with a PPT presentation about the recent earthquake in Sichuan Province as prepared by Prof. Peng Cui (pengcui@imde.ac.cn) of the Institute of Mountain Hazards and Environment (CAS) in Chengdu, Sichuan, who could not come. The PPT shows clearly about the locations of the quakes and results after that in terms of damages and injuries, with a death toll of almost 70,000 and millions of homes destroyed. The PPT is available on the WASWC website http://waswc.soil.gd.cn/SoilErosionNSWC.html in both English and Chinese versions.

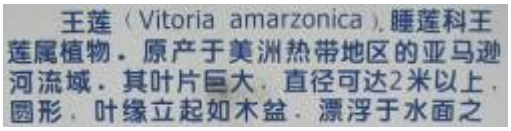
Pictures from the Sichuan earthquake on May 12, 2008, as shown at the conference opening. The PPT is available on WASWC website.

During the conference, each person was allowed 20 minutes to cover the talk and to answer a few questions. I think all of them, including my own, had used the Powerpoint computer program to present the works. I must congratulate Bill Gates once more for having done a good product for academic community to use in advancing their profession. (I always admire and thank him, since only because of his innovations of Windows and Microsoft Office that our association has been able to operate to serve members in 10 languages. Another person to admire (and even more than Bill Gates) is the US computer engineer Mr. Ray Tomlinson, who invented internet-based e-mail to use since 37 years ago http://inventors.about.com/od/estartinventions/a/email.htm. It was said such an innovation and its present impact – that no one during his/her active life could avoid the use of internet and e-mail – could be worthwhile as much as to earn the inventor a Nobel Prize!)

A 53-minute video on *"Lessons of the Loess Plateau"* was shown to the participants on the first day after ice-breaking. This was complimented by the Environmental Education Media Project (EEMP), Beijing, whose director, John Liu (johnliu@eempc.org), came to present it by himself. The video shows what development personnel should do in their work on the Chinese Loess Plateau, which can be applied to all other development works. A small screen video could be viewed from www.earthshope.org.

Afternoon on **July 15,** we went to the Beijing Botanical Garden, which is located on the west side of the city, a short history of which is shown below. I had planned to visit the Beijing Botanical Garden since sometime ago. Now, with the conference program accommodating this trip it bacame like a double treat that I do appreciate the organizers greatly.

We arrived at the Institute of Botany (CAS). We passed by the bulidings that are being used as office and herbarium and were taken around to see arboretum, gardens and glasshouses. Following are some photos taken during this short trip of little more than one hour.


王莲〈Vitoria amarzonica〉,睡莲科王莲属植物。原产于美洲热带地区的亚马逊河流域。其叶片巨大,直径可达2米以上,圆形,叶缘立起如木盆,漂浮于水面之

With digital photography, we are able to gather a lot of information within a short time. In one building during this short tour I took a photo of South American water lily and its descriptive plate and found later that the misspelt English words (typos) are still rampant in China, e.g. Vitoria amarzonica (wrong) instead of Victoria amazonica (right). A photo of *V. amazonica* in a glasshouse of the Institute of Botany is shown here, which you may compare with the one in Japan, that a child could sit on its huge leave comfortably (but needed something to help in spreading her weight).

Beijing Botanical Garden in Brief

Beijing Botanical Garden, located near the Wofo Temple in the Western Hills, was founded in 1956 with the approval of the State Council. Covering an area of 400 hectares with more than 10,000 taxa, or over 1,500,000 plants, the garden engages in collecting, displaying, and conserving plant resources. Tapping the rich plant resources, the BBG serves multiple functions, including scientific research and education, tourism and recreation, germplasm conservation and ornamental plant breeding and testing. The Beijing Botanical Garden is composed of four main parts: the plant exhibition area, the scientific research area, sites of historical interest and a nature preserve.

The plant exhibition area is divided into an ornamental plant section, an arboretum and a conservatory. The ornamental plant section consists of a Rose Garden, Ornamental Peach Garden, Tree Peony Garden, Herbaceous Peony Garden, Lilac Garden, Crabapple & Cotoneaster Garden, Magnolia Garden, Bamboo Garden, Perennial Garden and Mei Flower Garden. The Rose Garden is by far the largest of its kind in China, where nearly 1,000 cultivars are currently growing. The Ornamental Peach Garden has collected the most varieties of flowering peaches to be found worldwide. Every spring the garden sponsors 'the Beijing Ornamental Peach Festival' attracting millions of visitors. The arboretum houses a Conifer Collection, a Rosidae Collection, a Caryophyllidae Collection, a Magnoliidae Collection and a Asteridae Collection. The Tropical Conservatory was ranked within the Top Ten Buildings of Beijing in the 1990s and houses the different styles of Penjing displayed in Penjing Garden.

The historical sites of interest include the Wofo Temple, the Cherry Valley, the Cao Xueqin Memorial, the Liang Qichao cemetery and the Site of Longjiao Temple. The Wofo Temple was initially built in the Tang Dynasty and is a state protected historical site. This site houses a reclining Sakyamuni statue cast of bronze during the Yuan Dynasty. The Cherry Valley abounds with various trees and is an important education site for the protection of nature within this suburb of Beijing. At the Cao Xueqin Memorial, the life story of the great author is told and his experiences while writing the *Dream of the Red Mansions* are retold.

Beijing Botanical Garden was listed among the first group of AAAA National Scenic Areas in January of 2000. And in March of 2002 it passed both ISO9000 Quality System and ISO14000 Environmental Management System certification. It is also listed among the premier group of Beijing's Selected Parks and Top National Parks. Beijing Botanical Garden has always welcomed visitors from home and abroad with its beautiful environment, excellent service and attractive culture.

From left: *Office building of the Institute of Botany – CAS, large part of it would be the herbarium; Stone pillars of the Institute; A pleasant walkway within the arboretum; A large juniper; Flowers of crepe myrtle; Daylily, an edible flower; Victoria lily, an Amazonian water plant its leaf can carry the weight of a child, the last photo is from Japan.*

Next, we stopped at one glasshouse and our Austrian friend, Gernot Fiebiger, told us that in his country such a cactus with many long, hard and sharp thorns is called 'mother-in-law's stool'. many of us giggled when hearing that but agreed that such a name is apt! I remember we have perhaps a hundred of them at the glasshouse of the Queen Sirikit Botanic Garden in Chiang Mai, northern Thailand. (Note: In Thailand we spell 'Botanic Garden', NOT 'Botanical Garden' like in China.)

We crossed the road and here we were at the Botanical Garden side. There are many gardens inside and I think it's better to spend one full day in here. I, however, took a number of photos to show to friends as follows:

From left: *Large stone with the name of the Beijing Botanical Garden at its entrance; Zhuo (Growing Strong) – the sculpture initially created by Japanese sculpturist Mitsuaki Sora to mark the 30th anniversary of the formalization of China-Japan diplomatic relationship in 2002. It was xpanded in 2007 to symbolize the friendship of five continents under the Olympic flag; Pleasant pedestrian path inside the Garden, with many pictureque* Salix matsudana *(or Pendula) trees; A typical bridge built in an ancient design; Glazed Arch was constructed during the reign of Emperor Qianlong which has four pillars and three arches, with single-layer saddle roof made of yellow glazed tiles; A monument showing where the line of 40ºN latifude of the earth passes.*

From left: *Walking along the Wangfujing pedestrian street at night, one may come across many shops; Century-old gift shop; A shop selling clothes; Wangfujing snack street catering all types of food, especially from remote areas and some strange food like roasted scorpions.*

We arrived back not late, so I took a chance to go to stroll alone at Wangfujing walking street, looking at the century-old giftshop, bought some souvenirs, tried some local foods at a branch street, bought some English books at the Beijing Foreign Languange Bookshop – I got several good books this time, including the one that describes all World Heritage Sites of China (except the last one – the clayhouses in Fujian Province) – then went back to the hotel.

On the evening of **July 16** we were advised that the Yuejia Garden Restaurant for our conference banquet was only 7 minutes away by car or 25 minutes if we wanted to walk. While I preferred walking but I did not want to risk this special event by getting lost; so I went with the group in one of the two organized buses. Along the way, we saw a lot of digital technology enterprises, being dubbed the Silicon Valley of Beijing.

From left: *Entrance gate to the Yuejia Garden Restaurant; Every participant seems to carry a camera; To take photo of a few shows; A lovely maid examines her photo in the camera of our Bhutanese friend Tshering Dorji; A good cheer of the Pan-Hellenic Group; A lovely maid shares a happy moment with Alexia and me; Congratulatory speeches from participants; Maids appear in ancient colorful costumes; Ch-e-e-se – when two old friends take a photo together; Hong Bizhen and Walter Chen being served; A friendly chat between two Balkan friends; Entrance-exit way is beautifully lit at night.*

As indicated in the restaurant's brochure, the components of this restaurant are various, not just material cuisine, but also mental food. By the end of the banquet, all participants had enjoyed the evening enormously and we left for the hotel fully satisfied.

Late afternoon of **July 17:** It was the closing session and time to say good-bye. Doug Wimble and I had dinner together in the evening. We shared a feeling that both WASWC and IECA when working together will benefit in many aspects that will help make conservation of both agricultural and non-agricultural land proceed faster. We will thus propose to each council that WASWC and IECA should cooperate in certain activities, e.g. organizing technical meetings with acceptable quality. I myself see much possibility in this venture, since both WASWC and IECA have a global mandate and the types of area of interest can complement each other very well.

(Earlier in the day, I had a lunch meeting with Henry Lu Shunguang, our Executive Secretary and we agreed on emphasizing the works of WASWC in China to be in Beijing, Yangling and Guangzhou – we may thus call this China Triangle, to correspond with the India Triangle of Delhi-Ludhiana-Dehra Dun. Also on Tuesday, July 15, I met Li Hui, an intelligent student of Prof. Li Hongwen of China Agricultural University in Beijing. We discussed in various matters. Another matter: Money that WASWC members had donated to help Sichuan earthquake victims was given to the conference organizers.

SonTek
YSI incorporated

[SOUND PRINCIPLE NO. 27]

Extreme Weather events require Extreme Monitoring Solutions

www.sontek.com

Sound Principles. Good Advice.

Issue 5

INSIGHT ON ULTRA-LOW SEDIMENT FLOW PROVIDED BY ARGONAUT-ADV®

LOUISIANA, USA. Louisiana's coastal wetlands provide vital wildlife habitat and a strong buffer against storms. But they are threatened by subsidence and cut off from the historic floods that built the Mississippi River Delta. Using SonTek Argonaut-ADVs®, a Louisiana State University team captured continuous streams of data on shallow, slow-moving currents (down to 1 mm/s) that are notoriously difficult to measure. Their findings are teaching stakeholders how releases of sediment-rich pulses of water through a diversion structure near New Orleans may be managed to help rebuild marshes while minimizing impacts on local fisheries.

> www.sontek.com/news/UltraLowFlow.pdf

ACOUSTIC DOPPLER TECHNOLOGY ENABLES FAST ASSESSMENT OF POST-QUAKE HYDRAULIC CONDITIONS

SICHUAN PROVINCE, China. A 7.9 magnitude earthquake in China left millions homeless and susceptible to thirst and water-borne disease as it ravaged the country's hydrology monitoring stations. SonTek/YSI immediately responded with assistance and hydroacoustic equipment — allowing hydrologists to gauge the speed and strength of water flow, as well as monitor drinking water distribution. The advanced RiverSurveyor®

provided fast assessment of flood conditions and did in minutes what had taken hours for a field crew with conventional instruments.

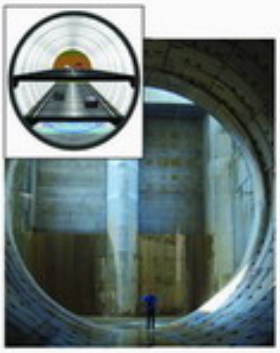
> www.sontek.com/news/ChinaQuake.pdf

For FREE technical notes, access to web-based training and product information, visit www.sontek.com. Questions? E-mail: inquiry@sontek.com. Or call: +1.858.546.8327.

A SMART WAY TO HANDLE FLOODS

KUALA LUMPUR, Malaysia. Devastating floods are common in crowded Kuala Lumpur, necessitating the massive Stormwater Management and Road Tunnel (SMART) project. Because accurate and timely information on discharge and velocity are vital for success, 16 SonTek Argonaut-SL and Argonaut-SW current meters were required. Says Bruce Sproule, Greenspan Technology's International Manager, "SonTek equipment...was the easiest and most accurate to incorporate into this project. The support is good and the equipment reliable."

> www.sontek.com/news/SmartTunnel.pdf



The most common and widespread of the world's natural hazards is the flood. According to UNESCO, these disasters strike about 150 times, impact 500 million lives, and create at least $60 billion in damages – each year. Providing fast and reliable flow data under unpredictable conditions is serious business at SonTek. And making a difference anywhere in the world means our instruments have to be accurate, reliable, and capable under extreme conditions.

FEATURES

CC&C Highlight

Climate Change Threatens Himalayan Region

The International Centre for Integrated Mountain Development (ICIMOD) and the World Agroforesty Center, China (ICRAF-China) warned the global community on the impacts of climate change on the Himalayan water resources at a seminar on Asian Water Towers at the World Water Week in Stockholm held in August 2008. The seminar was held as part of the World Water Week in Stockholm to raise awareness amongst the international community, to identify policy options strengthening the adaptation and resilience of the mountain people.

High-level representatives from Bangladesh, Bhutan, China, India, Nepal and Pakistan also presented their analysis from their respective points of view according to ICIMOD. Global climate change according to data published by ICIMOD is causing a rapid melt down of snow and glaciers in the Himalayan region and the water from the Himalayan river systems flows into water basins with a total population of almost 1.3 billion.

"Warming in the Himalayan region has been much greater than global average. Both increasing and decreasing rainfall patterns have been detected in the area. Weather patterns are becoming more unpredictable and extreme dry seasons become dryer and wet seasons wetter. This phenomenon is causing concern over the long-term reduction in total water supply, affecting lives and livelihoods of the Himalayan people, especially in agriculture practices and long-term food security." According to a press statement issued by the organization Dr. Andreas Schild, Director General of ICIMOD, said that the signs of global climate change were visible, but the in-depth knowledge and data from the Himalayan region was missing. "There is an urgent need to increase scientific co-operation and regional collaboration to reduce this information gap."

He said that the policy orientation for the following lines of action should be considered. One should increase the capacity to manage risk and hazards affecting the most vulnerable people and increase the regional and trans-boundary cooperation to improve early warning systems. People should promote integrated river basin and water management schemes, strengthen policies which enable the storage of surplus water during the monsoon and improve the availability of water during dry season. He also suggests that people should promote the exchange of scientific data thus reduce uncertainty, and clarify the relation between economic growth, pollution and the receding cryosphere in the Himalayas.

"The Hindu Kush-Himalayan region is the highest, most complex mountain region in the world. It extends more than 3,500 km over eight countries, from Afghanistan in the northwest to Myanmar in the southeast. The region ranges from the plateau regions of Tibet and other mountain areas of China, to the Ganges Basin in India, and has the upland watersheds of the ten major Asian river systems," he said.

Prof. Xu Jianchu from ICRAF, China gave a Chinese perspective on Himalaya and its water resources. The greater Himalayan region – the roof of the world – contains the most extensive and rugged high altitude areas on Earth and the largest areas covered by glaciers and permafrost outside the Polar regions. The water resources from this area drain through nine of the largest rivers in Asia, in which basins more than 1.3 billion people find their livelihoods. The region and its water resources play an important role in global atmospheric circulation, biodiversity, irrigated agriculture, potential hydropower, as well as for the production of commodities exported to markets worldwide. The water resources of this region are currently facing threats from a multitude of driving forces. Global warming is severely impacting on the amount of snow and ice and thereby on downstream water availability in short and long term. Up to 50 percent of the average annual flows are contributed by snow and glacial melting. The story is from http://cafemanha.blogspot.com/2008/09/climate-change-threatens-himalayan.html

SWAT Highlight

Soil and Water Assessment Tool background and 2009 5th International Conference set

The Soil and Water Assessment Tool (SWAT), a public domain computer model, is a sophisticated model that predicts the impacts of weather, soils, land use and land management on water supplies as well as nonpoint and point source pollution in small to large watersheds. It was developed by United States Department of Agriculture – Agricultural Research Service (USDA-ARS) and Texas AgriLife Research, part of the Texas A&M University System.

The model predicts how much water, sediment, nitrogen, phosphorus, pesticides, bacteria and other pollutants are running off the land and getting into lakes and rivers and the impact different water management decisions could have. Information such as rainfall amount, soil type, and the amount of nutrients and pesticides applied to the land over the years are fed into the model. Geographical information systems (GIS) are also integrated into the computer program that has 400 to 500 mathematical equations with more than 50,000 lines of computer code.

"We give our best estimate of what's going to happen," said Dr. Raghavan Srinivasan, director of Texas A&M University's Spatial Sciences Laboratory, "and SWAT's estimation gives decision-makers a tool to solve water quality problems."

"For policymakers, models such as SWAT can serve as virtual laboratories for testing the effectiveness of alternative environmental policies and pollution control programs," he said.

Another important and growing use of SWAT is determining the impacts of climate change in the United States and abroad. Global circulation models help predict what is going to happen to temperature and precipitation. Information from those models is fed into SWAT to see what changes will occur to the water supply, reservoir levels and aquifer recharge based on the predicted global climate changes.

Srinivasan and other SWAT developers and users travel around the world, conducting workshops and teaching SWAT and related tools.

"We really wanted to deliver a tool that is usable and useful and applied to solve real-world assessments rather than a pure research tool that sits on a shelf," Srinivasan said. "We made the decision to take the technology to the users."

The International SWAT Conference in Southeast Asia Chiang Mai, Thailand will be Jan. 5-8, 2009. For more information about the conference visit: http://www2.mcc.cmu.ac.th/swat/.

The 2009 5th International SWAT Conference will be Aug. 5-7, 2009 at the University of Colorado at Boulder, Colorado. Workshops offered prior to the conference include Introductory SWAT, SWAT Developer's, and Integrated APEX/SWAT and will be held concurrently, Aug. 3-4, 2009.

For more information about the conference or workshops, and for registration information, visit the conference Website: http://www.brc.tamus.edu/swat/conf_5th.html.

If interested in other water resources training courses offered by Texas A&M AgriLife Texas Water Resources Institute including SWAT Workshops, Floodplain Delineation using GIS, and APEX Workshops, visit the Water Resources Training Courses Web site: http://watereducation.tamu.edu/.

Dr. Srinivasan at a SWAT lecture

- *Cortney Swydon,* Texas A&M University, 1500 Research Parkway, Suite A240 College Station , TX 77843-2118, USA CMSwyden@ag.tamu.edu and SWAT Team

The WASWC is going to publish a SWAT textbook that narrates how this very useful program was developed, tested and used in various countries over a period of 25 years. Interested agencies/institutions are welcome to join as co-publishers and purchase the book at a low pre-published price. Contact sombatpanit@yahoo.com for details.

SOIL FERTILITY HIGHLIGHT

A Recent Soil Fertility Debate

David Hughes for the Future Agricultures Consortium, D.Hughes@ids.ac.uk David Hughes / Future Agricultures Consortium (FAC) communications and networking officer, IDS, M: +44 (0)7505 304104 | T: +44 (0)1273 877147 | www.future-agricultures.org

Please accept our sincere thanks for your contributions to this important debate. We received more than thirty thought-provoking submissions that covered the soil fertility debate fully. I hope you will agree that this debate is timely, particularly as recent discussion about increased agricultural spending equally requires discussion about ways to use available resources. I think our debate has provided some insightful answers for the development community.

Please follow this link to read all the contributions: http://www.future-agricultures.org/soilfertility_responses.html and follow this link to read Ian's overview and summary of the debate: http://www.future-agricultures.org/Soil Fertility/SOILS Frameworks.pdf.

If you have any additional comments, FAC would very much welcome them. Please send them to: soils@ids.ac.uk. In the coming weeks, we hope to use the points raised in the debate to engage Dfid, AGRA, and others on soil fertility. We will keep you updated on progress to bring soil fertility into policy discussions and the media.

Thank you again for your contributions and please continue to stay in touch with FAC, by visiting our website or by contacting FAC members directly.

VETIVER Highlight

New Publications of The Vetiver Network International (TVNI), by Richard Grimshaw, Chairman, Board of Directors, The Vetiver Network International, Washington, DC, USA. r.grimshaw@comcast.net, www.vetiver.org

The Vetiver Network International (TVNI) is producing a series of books on vetiver for sale at a budget price. They are listed below:

1. Vetiver System Applications – Technical Reference Manual by Paul Truong, Tran Tan Van, Elise Pinners. List price $20 + shipping
2. The Vetiver System for Water Quality Improvement by Paul Truong, Tran Tan Van, Elise Pinners. List price $15 + shipping
3. The Vetiver System for Slope Stabilization by Paul Truong, Tran Tan Van, Elise Pinners. List price $17 + shipping
4. The Vetiver System for Agriculture by Paul Truong, Tran Tan Van, Elise Pinners. List price $17 + shipping
5. The Vetiver System for Soil and Water Conservation by John C. Greenfield. List price $15 + shipping

These books are sold through Amazon.com and EBooks.com. They can also be purchased in bulk - minimum order 10 copies – wholesale at $8 each + shipping from TVN (contact Dick Grimshaw at r.grimshaw@comcast.net). Currently, TVNI is having translations (funded by TVN) of "Vetiver Systems Applications – A Technical Reference Manual" prepared in French, Spanish, Mandarin and Swahili. It has already been published in Vietnamese.

LANDCARE HIGHLIGHT

Australian Landcarers looking beyond their shores

Australians are proud that Landcare, which started there in 1986, has spread to fifteen or so countries. Recently a group of Landcare veterans formed Australian Landcare International (ALI) to deal with overseas enquiries and help develop projects overseas, especially in the Pacific. The group runs a travel fellowship – one Fellow visited New Zealand last year and a second is in Virginia and North Carolina throughout October 2008.* Three members are working under ICRAF's Delia Catacutan in the Philippines to produce a book on Landcare around the world. More publications may follow. Other members are investigating ways to support several projects in Asia and the Pacific. Website design is under way, and ALI is networking hard with other Australian groups associated with projects abroad.

Australia, New Zealand, the Philippines, Republic of South Africa, Zimbabwe, Uganda, Kenya, Tanzania, Iceland, Germany and USA have Landcare programs. There are Landcare projects and groups in the UK and Canada.

East African Landcare coordinators report that it is moving into Rwanda and Ethiopia. The South Pacific Community has considered introducing the concept throughout the region.

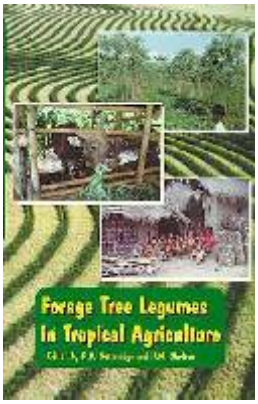
- *Rob Youl,* ALI Chairman rob.youl@landcareaustralia.com.au

*Funded by a small group in Melbourne, Victorian Landcare Travel Fellow, John Robinson, is spending October in Virginia and North Carolina meeting US Landcare groups and looking at projects - thanks to regional Landcare pioneers David Robertson of Virginia Tech and Jerry Moles of Grayson Landcare for their enthusiastic help.

Agroforestry Highlight

Craig Elevitch, Permanent Agriculture Resources, P.O. Box 428, Holualoa, HI 96725 USA. Tel.: 808-324-4427; Fax: 808-324-4129 cre@agroforestry.net, agroforester@gmail.com

Alley cropping (hedgerow intercropping) (The article is the expanded version of the one presented in the WASWC Newsletter issue 24/2).



Alley cropping or hedgerow intercropping is an agroforestry practice in which perennial, usually leguminous trees or shrubs are grown simultaneously with an arable crop. The trees, managed as hedgerows, are grown in wide rows and the crop is planted in the interspace or 'alley' between the tree rows. During the cropping phase the trees are pruned and the prunings are used as green manure or mulch on the crop to improve the organic matter status of the soil and to provide nutrients, particularly nitrogen, to the crop. The hedgerows are allowed to grow freely to shade the inter-rows when there are no crops. Alley cropping retains the basic restorative attributes of the bush fallow through nutrient recycling, fertility regeneration and weed suppression and combines these with arable cropping so that all processes occur concurrently on the same land, allowing the farmer to crop the land for an extended period.

Some of the beneficial effects that have been claimed for alley cropping include:
* improved crop performance due to the addition of nutrients and organic matter to the soil/plant system,
* a reduction of the use of chemical fertilizers,
* an improvement in the physical nature of the soil environment. The addition of mulch can lower soil temperatures, reduce evaporation, and improve soil fauna activity and soil structure, resulting in better infiltration, reduced runoff and improved water use efficiency,
* on sloping land, the tree rows act as a physical barrier to soil and water movement, resulting in significant reductions in erosion losses,
* the provision of additional products such as forage, firewood or stakes when a multipurpose tree legume is used as the hedgerow, and
* an improvement in weed control. During the fallow period shading of the interspaces may reduce weed growth; while in the cropping phase, the mulch may inhibit germination and establishment of weeds.

An important benefit of alley cropping is the addition of large amounts of organic materials from the prunings as mulch or green manure which can have favorable effects on soil physical and chemical properties, on microbiological activity and hence on soil productivity. Several studies have demonstrated significant positive effects of alley cropping on soil fertility parameters such as organic C levels, total N and extractable P levels over a range of climatic and soil conditions. The magnitude of these effects, however, varied with hedgerow species and management as this influenced the quantity and quality of prunings. Factors such as C:N ratio, lignin and polyphenol contents influence the decomposition rate of the mulch, the subsequent release of nutrients and their uptake by the crop. Mulches from *Sesbania sesban*, *Gliricidia* and *Leucaena* were found to be effective sources of N for maize growth while those from *Calliandra calothyrsus*, *Acacia cunninghamii* and *A. fimbriata* were ineffective in the short term. This may have been due to the high polyphenol and/or lignin content of the latter species. It was found that only about 38% of N in *Leucaena* prunings was recovered by a maize intercrop while mulching with *Leucaena* leaf was only 41% as efficient in supplying N to maize. The efficiency of utilization of N from the prunings can often be improved by incorporation. Incorporation of *Leucaena* leaf produced a higher N uptake than when applied as surface mulch. It increased the efficiency of mulched *Leucaena* leaf to 63% that of urea by incorporation. Incorporation improved maize yields both in the presence and without additional nitrogen fertilizer. Use of fresh rather than dry prunings also improved the rate of N release and uptake by maize.

Hedgerows have the ability to recycle nutrients and although this aspect has not been widely studied. Higher concentrations of N, K, Ca and Mg were found in the surface soil than in the subsoil under the hedgerows. This is attributed to leaf litter fall and nutrient uptake by the trees from the subsoil. In the centre of the alley plots, the reverse situation occurred with lower nutrient levels in the surface soil due to crop uptake and higher levels in the subsoil due to leaching. This result shows that alley cropping can reduce the downward displacement of nutrients.

A large number of experimental results have confirmed the significant role of alley cropping in reducing runoff and soil erosion by *Gliricidia* and *Leucaena* by 73 and 83%, respectively, compared with a tilled control treatment. Rows of *Leucaena* planted at 5 or 10 m intervals across the slope were as effective as conventional contour banks in reducing erosion on a 10% slope in southeast Queensland. In a trial lasting 3 months on a Typic tropudalf, erosion was greatly reduced by the presence of *Desmanthus virgatus* hedgerows spaced at 6 m intervals. A total of 1,424 mm of rain fell during the experimental period. Total soil loss was 127 t/ha in the control treatment, 41 t/ha with *Desmanthus* hedgerows and contour cultivation, and 0.2 t/ha with hedgerows, application of prunings as a mulch and zero tillage.

The germination and growth of most weed species are usually stimulated by exposure to light. Thus some control of weeds may be effected if a closed canopy can be maintained during the fallow period in an alley cropping system. The shoot biomass of *Imperata cylindrica* decreased by about 80% under uncut hedgerows of *Gliricidia* and *Leucaena* in Nigeria. The weed yields under hedgerows of *Flemingia macrophylla*, *Gliricidia* and *Cassia siamea* when they remained uncut for 2 years.

There also appears to be a shift in weed composition following alley cropping. A significant change towards more broadleaf weeds was observed after alley cropping with *Leucaena* and *Dactyladenia* compared with the control treatment. In most alley cropping systems, the weed suppression effect of the hedgerows is not fully exploited and further studies of the effect of different hedgerow species, fallowing and manipulation of cutting regimes may improve the effectiveness of the system in reducing weed infestation.

B.T. Kang and R.C. Gutteridge, Australia
http://www.fao.org/ag/AGP/AGPC/doc/Publicat/Gutt-shel/x5556e00.htm

WOCAT Highlight

Dear WOCATeers

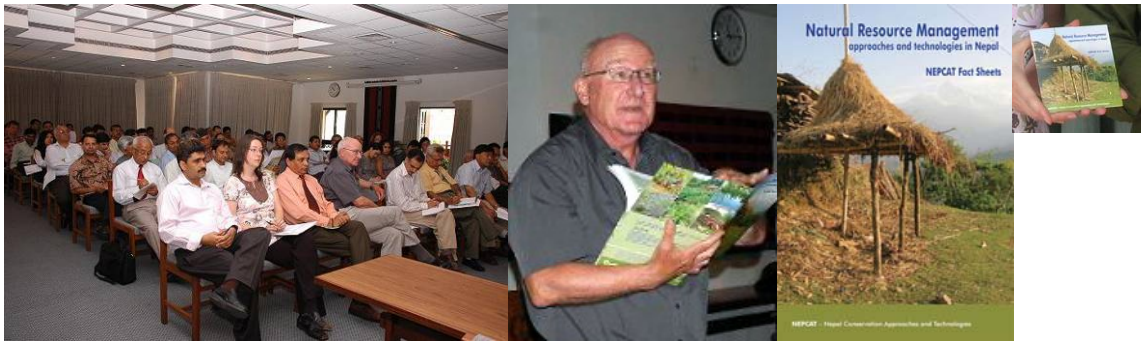
We have the happy news to announce that the NEPCAT fact sheets got finally published.

We had a NEPCAT launching event on April 25th, 2008, which went well.

You have access to the fact sheets under the following link.
http://dev.icimod.org/elibrary/index.php/search/publication/518

NEPCAT Fact Sheets

Natural Resource Management – approaches and technologies in Nepal



In the present publication, thirty technologies and approaches from the Nepal Conservation Approaches and Technologies (NEPCAT) database, documented using the WOCAT tool, are being published as printed fact sheets to facilitate sharing with a wider audience. The fact sheets are designed to support the efforts of rural development, especially in Nepal, and provide impetus and ideas for decision-makers, development actors, and land users. They cover adaptations of methods and new options for land use and rehabilitation and growing and processing crops that increase productivity and support income generation. Users are encouraged to print out, copy, and distribute the sheets in any form that facilitates sharing. The sheets are also available on a CD-ROM

and online. Please visit the following link: http://dev.icimod.org/elibrary/index.php/search/publication/518 (Photos above show the launch of NEPCAT at ICIMOD HQ by its Director General, Dr. Andreas Schild.)

WOCAT, HIMCAT and NEPCAT

The World Overview of Conservation Approaches and Technologies (WOCAT, www.wocat.org) is a global network of soil and water conservation (SWC) specialists that facilitates the sharing of knowledge on soil and water management and the efficient use of existing know-how. The Himalayan Conservation Approaches and Technologies (HIMCAT, www.himcat.icimod.org) network is an offspring of the global WOCAT initiative – a virtual platform set up to enable its members and other SWC specialists from across Asia to share their information and knowledge on soil and water management. Nepal Conservation Approaches and Technologies (NEPCAT) was set up under HIMCAT in 2006 specifically as a platform for sharing experiences from Nepal on soil and water management and natural resource management in general. Contributors' experiences are documented using the WOCAT tool, a format for recording information in a consistent and comparable manner for easy reference and understanding.

All new contributions to the database and fact sheets in Nepal are welcome. Please contact us and join the NEPCAT initiative. himcat@icimod.org

HIMCAT / NEPCAT team

Isabelle Providoli, Soil and Water Conservation Specialist (iprovidoli@icimod.org)
Environmental Change and Ecosystem Services Programme
Integrated Watershed Management Action Area
International Centre for Integrated Mountain Development (ICIMOD)
Khumaltar, Lalitpur, GPO Box 3226, Kathmandu, Nepal
Tel: (+977 1) 500 32 22; Fax: (+977 1) 500 32 99

SUMMARY REPORTS

A sustainable future for olive production on sloping land? Lisbon, Portugal, March 22, 2006

This special issue of the Journal of Environmental Management presents the proceedings from the final seminar of the Olivero project (2003-2006), held in Lisbon on March 22, 2006. The full title of the project was: "The future of olive plantation systems on sloping and mountainous land; scenarios for production and natural resources conservation". Its acronym is derived from the combination of the words 'Olive' and 'Erosion'. The Olivero project, funded by the European Union under its fifth research framework program and executed with six partner institutes in five countries (Stroosnijder et al.), addresses the environmental and socioeconomic sustainability of Sloping and Mountainous Olive Production Systems (SMOPS). On the often shallow and stony soils in the steep areas occupied by the SMOPS, annual crops performed very poorly, rendering olive growing the most profitable land use possible. Despite of this comparable advantage, the remote and poorly accessible regions had limited access to agricultural markets and problems of soil erosion. In order to make the best use of scarce soil and water resources, terraces and other soil and water conservation techniques were widely applied.

From left: Visit to sloping olive field near Mirandela, North-Portugal; Discussions about results of runoff plots in olive grove near Mascarenhas; Runoff plots and reservoirs in stony olive grove near Mascarenhas, Portugal (Research undertaken by Tomás de Figueiredo and Luuk Fleskens).

Although remnants of these traditional landscapes still exist today, the general trend is different. Demographic changes of the rural population, integration in the market economy and technological innovation have drastically changed agricultural production systems and the environment. Strikingly, olive production systems that have been sustainable for ages have in a relatively short time frame witnessed major changes that led to the question: is there a sustainable future for olive production on sloping land, and if so, what actions should farmers and policy-makers take to achieve it?

In a nutshell this was the rationale for the Olivero project. The question became even more pertinent in the light of recent EU policies. Until 2005, the subsidies promoted intensification, and led to an unprecedented expansion of olive cultivation, especially in Spain after joining the EU in 1986 (De Graaff and Eppink, 1999). The policy-driven expansion led to unsustainable farming practices (Beaufoy, 2001). The EU, in recognition of policy failure, and faced with the inherent out-of-control budget requirements, made proposals for policy change in 1997. With the incorporation of the common market organization for olive oil in the single payment subsidy scheme, a new policy became effective in 2005, lasting until 2013.

Many of the projects' deliverables are available for download from its web-site: www.olivero.info.

The key-results of the project are presented in the papers of this special issue. This special issue unites six research papers and one commentary: it starts off with an introductory paper: "OLIVERO: the project analyzing the future of olive production on sloping land in the Mediterranean basin" (Stroosnijder et al.). This paper sets the scientific stage of this issue and presents the highlights of the project. Subsequently, there are four papers dealing with the four major SMOPS types:

- Traditional olive orchards on sloping land: phasing out or enhancing biodiversity? By Duarte et al.
- Organic olive orchards on sloping land: more than a specialty niche? By Gomez et al.
- Semi-intensive olive orchards on sloping land: requiring good land husbandry for future development. By Xiloyannis et al.
- Intensive olive orchards on sloping land: requiring good water and pest management. By Metzidakis et al.

After these papers, the sixth paper deals with: "Prospects and scenarios for the future of olive production systems on sloping land" (de Graaff et al.), focusing on the target areas of the project: Trás-os-Montes (Portugal), Córdoba and Granada/Jaèn (Spain), Basilicata/Salerno (Italy) and West-Crete (Greece). The final paper consists of a commentary on the project including some personal reflections by Dr. G. Beaufoy.

Information about the purchase of this Special Issue can be found on the website of Journal of Environmental Management (www.academicpress.com/jem) of Elsevier. The Special Issue is Volume 89, Issue 2, pp 73-142.

- *Luuk Fleskens and Jan de Graaff,* Erosion and Soil and Water Conservation Group, Wageningen University, 6709 PA Wageningen, The Netherlands jan.degraaff@wur.nl

International Agroforestry Education Conference: The Role of Agroforestry in Upland Development, Chiang Mai, Thailand, October 24-26, 2007

Lives and landscapes in the uplands of Southeast Asia are being rapidly transformed by profound societal changes in perspectives and emerging global environmental issues, the evolving demands of society on forestry and agroforestry and new actors and institutional arrangements in governance and policy. This was the subject of debate for 130 scientists, educators and practitioners from Kenya, Canada, USA, The Netherlands, Sweden, Italy, Germany, Japan, Indonesia, Philippines, Laos, Vietnam and Thailand at a 3-day International Agroforestry Education Conference on 24-26 October 2007 in Chiang Mai, Thailand to examine the transformations and identify ways to better develop the uplands through agroforestry.

With the theme "Integrating Conservation in the Upland Agriculture in Southeast Asia," the conference covered three main sessions, namely: 1) Striking a balance between food security and environmental conservation in the uplands; 2) Making more sense of past and present upland development programs and policies; and 3) Redefining the niche of learning institutions in agroforestry education for upland development. Invited keynote speakers expounded on each of the sessions while 37 participants shared project experiences through oral (16) and poster (21) presentations.

The Conference revealed that upland stakeholders in the region have different perspectives on balancing food security and environmental conservation. For some, the route of market-based intensification of vegetables and flowers for export have worked and provided an alternative to unsustainable shifting cultivation. In other contexts, intensified rice production can still play this role. For others, the complex agroforests have provided a long-term approach that still allows response to changing market environment. Ecotourism, empowerment of minority groups and re-appraisal of indigenous knowledge in conservation are a major influence in the more accessible parts of montane mainland Southeast Asia. Market oriented livelihoods change leads to social stratification depending on comfort level with risk, access to suitable land and transportation. The 'rights and resources' issue provides an underpinning for effective lowland – upland linkage, benefit sharing, co-investment and reward mechanisms.

The Conference also noted that development and policy problems in the uplands reflect the needs to (a) challenge knowledge uncertainties, myths, and overly simplistic perceptions; (b) expand sustainability focus from ecology to social and economic dimensions; (c) understand households and communities as managers of asset portfolios; (d) accept and understand diverse interests and needs of local stakeholder groups; (e) address institutional challenges for co-management and stakeholder alliances; and (f) understand processes at different levels/scales and interactions among them. It also highlighted the importance of using scientific tools and approaches beyond agriculture and forestry (e.g. psychology, economics, geography, anthropology, landscape ecology, political science, regional planning, etc.) to investigate local perceptions and decision-making in policy development, and building strategic alliances among stakeholders.

As regards the niche for agroforestry education, the Conference surfaced several basic questions. Why are there few learning institutions in the SEA region that offer programs in agroforestry? Why agroforestry education is generally assumed to fall within the forestry discipline? Is there really a demand for agroforesters? If so, who needs them? With the scope of agroforestry expanding due to the emerging social, economic, and environmental concerns, what are its boundaries? What should really constitute agroforestry as a science? In the absence of a globally accepted typology of agroforestry land uses, spatial data on agroforestry is still weak and more empirical data are needed to critically assess the general romanticizing about the potential benefits of agroforestry and trees.

In four working group sessions, participants considered the relations between agroforestry and identified four important policy concerns: market-based economic development, poverty, climate change and environmental services, and decentralization/governance. In all four areas, agroforestry was considered as being potentially relevant, at farm, landscape and governance scale, respectively. Knowledge gaps, uncertainties and controversies in each of these four relations should stimulate relevant research – which will require disciplinary strengths and tools that go much beyond what has been so far the focus of agroforestry education. A substantial broadening of the approach is thus called for. SEANAFE and other educational networks are critical to create the needed synergy among the academe, government and private sectors towards promoting agroforestry in the uplands.

The conference was sponsored by the Sweden International Development Cooperation Agency (Sida), the German Research Foundation (DFG) and the United Nations Food and Agriculture Organization (FAO). It was jointly organized by the World Agroforestry Centre-SEA, the Southeast Asian Network for Agroforestry Education (SEANAFE), Chiang Mai University (CMU) and the University of Hohenheim-Uplands Program.

- *Jesus Corpuz Fernandez,* ICRAF, Indonesia j.c.fernandez@cgiar.org

FIRST NATIONAL VETIVER WORKSHOP FOR INDIA, Cochin, India, February 21-23, 2008

This workshop held in Kochi (Cochin) from February 21-23, 2008 was ably managed by the Indian Vetiver Network with support from Tata Tea Co. Ltd., KDHP Co. Ltd. and The Vetiver Network International. Some 300 participants showed up for the inaugural session and there were about the same number at the workshop's

closing, a good indication of participant interest. The workshop brought together farmers, engineers, NGOs, private sector and government agencies from all over India, as well as some who came from outside India

India is facing, at urban and village level, very serious water quality problems due to uncontrolled and untreated domestic and industrial wastewater. As a result of the Cochin workshop and the one before in Chandigarh, decisions have been made to go ahead with waste water treatment applications in Punjab and Haryana states. There is overwhelming data and experience that the Vetiver System (VS) can handle domestic wastewater and sewage effluent at small and medium scale. VS can deal with industrial waste water where large areas of land are available. For example, cleaning up to EPA standards of 1.5 million liters per day of effluent from a gelatin factory in Australia required 80 ha of land. This might be possible in India only if waste land was utilized.

The workshop was able to bring vetiver oil growers together with potential VS users, and an informal market emerged whereby the oil producers will sell plant material. If fully involved they could produce annually a total of 15-30 billion slips at a cost of just cutting off the roots and the leaves from the vetiver crown and bundling the slips together. Erosion is not a serious problem in oil producing areas except on steep lands, where it can be easily controlled by improved management practices by planting vetiver for oil between vetiver hedgerows. A 35 ha vetiver oil farm in Tamilnadu has been well managed, so there is no erosion, and it is producing non-fertile domesticated vetiver cultivars that could be used as plant material for vetiver applications.

Coastal beach and river erosion are problems that can be reduced using VS and have been aptly demonstrated in Chennai (Madras) and of course on many rivers in East Asian countries. Authorities in Kerala State see these as important areas of applications. India is planning massive highway and railway infrastructure developments. Under these investments contractors will be responsible for design, construction and maintenance for 20 years. Thus there is every incentive to use technologies that will improve quality and reduce maintenance costs. The Vetiver System is well placed to do just this when it comes to slope stabilization. Engineers from a large highway firm working out of Delhi attended the workshop and showed great interest in the use of VS for this purpose. India Vetiver Network should work with construction companies to develop appropriate workshops that target the engineers. The Vetiver System could be used most effectively to help rehabilitate waterlogged and saline areas found in central Haryana. Under such conditions vetiver could be grown as a high yielding forage (70 tons/ha) that could form a basis for an expanding dairy industry. The same might apply to Punjab and parts of UP where salinity is a problem.

India should carry out research relating to the carbon sequestering capability of vetiver grass (all indications are that it can) because its deep and mass root systems sequester large amounts of atmospheric carbon. Once criteria are properly identified and modeled, it is possible that vetiver growers could benefit from carbon exchange credits. The latter would provide added incentive to farmers to grow vetiver for soil and water conservation purposes. The Indian Vetiver Network can play an important role in expanding the technology in India. The Network could play an important role in linking vetiver plant suppliers with potential users, establishing guidelines for quality plant production, certifying growers who meet prescribed standards, coordinate vetiver handicraft training, and help set research priorities. It has an important role in expanding awareness of the Vetiver System by organizing special one-day workshops for different sectors, and to focus on areas of immediate need, such as highway and railroad stabilization and pollution control. The Vetiver System requires that vetiver grass be planted as a dense and continuous hedgerow on the contour so that it forms an effective barrier that functions with properties as described above. I believe that once people understand these principles and benefits many of the objections to its use will fall away. India is facing major problems that include soil erosion, rapidly declining ground water, and water pollution. The Vetiver System is a proven and very good technology that when used correctly can deal with many of these issues at one time and at a low cost!

- *Pottekad Haridas,* pottekadharidas@gmail.com, haridas.p@kdhptea.co.in

2nd International Conference on 'Ground Bio- and Eco-engineering: The Use of Vegetation to Improve Slope Stability', Beijing, China, July 14-18, 2008

The 2nd International Conference on 'Ground Bio- and Eco-engineering - The Use of Vegetation to Improve Slope Stability' was held in Beijing, China, July 14-18, 2008. Over 100 participants attended, representing 22 countries. Scientists and practitioners met together to discuss subjects areas ranging from plant root-soil interactions to large-scale mass wasting processes and restoration measures. In an era where more and more natural hazards are occurring, soil erosion, landslides and other catastrophic events result not only in the loss of lives and infrastructure, but cause major damage to the environment. The aim of these meetings therefore is to bring together scientific researchers, practitioners, geotechnical and civil engineers, biologists, ecologists and foresters to discuss current problems in slope stability research, and how to address those problems using ground bio- and eco-engineering techniques. Proceedings of the meeting will be published in special editions of the journals *Ecological Engineering* and *Plant and Soil,* in 2009.

The next conference will be held in Vancouver, Canada in 2012. Further information will be available at: http://icgbe2.cirad.fr/. The account of the trip to attend this conference is available in My China Diary II, Part 1 at http://waswc.soil.gd.cn/TRAVELOGUES.html.

- *Alexia Stokes,* CIRAD, Montpellier, France. alexia.stokes@cirad.fr, alexiastokes@yahoo.fr

MISCELLANEOUS

▲ Water is supreme, and gold
Like fire at night stands out
Among all the substances that heighten human pride--
But if you want to celebrate Greatness in games, O my soul, you'll find
No brighter star in the vastness of space
Than the sun, no contest more glorious
Than Olympia--

The poet Pindar wrote many odes celebrating Olympic victors. This one is from the first Olympian Ode, celebrating Hieron of Syracuse, who won the horse race in 476 BC.

Olympic Links

Official Website of the Beijing Olympic Games: http://en.beijing2008.cn/

Beijing Olympic Schedule:
http://en.beijing2008.cn/cptvenues/schedule/

US Olympic Television Coverage
(including athlete profiles and US team info):
http://www.nbcolympics.com/index.html

Future Olympic Games:

- 2010 Winter Games in Vancouver, Canada
- 2102 Summer Games in London, United Kingdom
- 2014 Winter Gamesin Sochi, Russia

- from August issue of F. X. Browne Newsletter

▲ Days, Years and Seasons: The natural phenomena controlling our calendar

By Dave Canavan (reprinted from Bangkok Post, September 2, 2008 with author's permission)

How we set the time, count our age or dress appropriately for the seasons is all a result of natural phenomena. How the Earth rotates and the relation of the Earth to the Sun all determine our clocks and calendars.

A day is the amount of time it takes for a planet to rotate on its axis once. On Earth that time is 23 hours 56 minutes and 4.1 seconds, although due to its orientation when orbiting the Sun, we work it out to be 24 hours.

A day is not to be confused with daytime, which is where the sun is above the horizon giving light to the Earth. One day includes daytime, which varies between seasons and location, and night time: the time when we are facing away from the Sun.

Day length on other planets varies enormously. The closest planet to the Sun, Mercury, takes 176 Earth days to spin on its axis once! This means that one 'day' on Mercury is actually longer than one 'year' as it takes Mercury only 83 Earth days to rotate around the Sun!

This also means that Mercury in 'daylight' has a surface temperature of 467^{o}C whereas the 'night time' temperature is -183^{o}C due to the extremely slow rotation. The fact that an Earth day is so short avoids these temperature extremes and allows life to exist.

Time Zones

Living in Thailand, I have to be careful at what time I ring my family in England as they are 6 hours behind us. I also have to be careful when calling my family-in-law as they are in Australia and are 3 hours ahead. The reason for this is to do with the East/West location on the globe, which determines what part of the Earth is facing the Sun at any given time.

The Earth is split longitudinally into 24 segments of exactly an hour apart, although political, geographical and daylight-saving factors have made these lines irregular. This allows all areas to have 24 hour logical day with standardized time. It also allows the world to communicate much more effectively if you know what time it is in the place you are calling.

A Year

This is defined by the amount of time it takes a planet to rotate around the Sun once. It takes the Earth 365.25 days to rotate around the Sun. This means that the Earth is spinning on its own axis continuously in an anti-clockwise direction (when looking down on the North Pole), whilst it travels on its massive journey around the Sun, also in an anti-clockwise direction.

We always class a year as 365 days but as stated it actually takes 365 and a quarter days for a complete rotation. As we obviously can't have a quarter day, we simply store them up until we have four quarters and add this extra day on to February, which we call a leap year.

Four Seasons in One Day

Seasons on Earth are dependant on many factors, depending on where it is you live in the world. Everywhere has some variation in climate and weather, but certain places are more extreme than others.

The reason for seasons is because the Earth is on a tilt in relation to its orbital plain. If you imagine the Earth orbiting around the Sun it has an axis through the North and South Pole around which the Earth rotates. If it were upright in its orbit is would be at zero degrees, but it is tilted at 23.5 degrees from zero.

This tilt remains in the same position regardless of where the Earth is in its orbit, meaning that at some times of the year the southern hemisphere (below the equator) is tilting more towards the sun with the northern hemisphere (above the equator) tilting away. Six months later, as the Earth has travelled half of its orbit, the northern hemisphere is tilted towards the Sun with the southern hemisphere tilting away.

The Land of the Midnight Sun

Depending on where you are on the globe, this tilt can have huge variations on weather and temperature. In the poles, the effects can be dramatic. At some points in the Arctic summer, where the northern hemisphere is tilted towards the sun, the sun never sets below the horizon. They have 24 hours of light where the Sun still shines at midnight!

Conversely, at the same time in the southern hemisphere it is winter in the Antarctic and the Sun never rises above the horizon. It is not completely dark for 24 hours as it will experience twilight, but to not see the Sun at midday must be very strange!

In temperate regions such as the UK, there are four seasons: summer, autumn, winter and spring. These are characterized by large variations in daylight hours and temperature which can lead to minus temperatures and 4 or 5 hours daylight in winter, to plus 20ºC temperatures and 17 hours daylight in summer, with transitional periods in spring and autumn.

Seasons in the Tropics

The seasons in the tropics do not have the daylight fluctuations and extreme temperature differences that the temperate zones have. Therefore, the seasons are often split into categories relating to weather and climate, such as dry, wet, hot and cool seasons.

Being in the tropics, whether the northern or southern hemisphere is tilted towards the sun doesn't make that much difference to daylight hours and temperature. This is why on the equator it is usually very constant with only the amount of precipitation varying.

Certainly, in Thailand's hot season you can tell we are tilted towards the sun and the rainy season is due to weather patterns as a result of the tilt on certain areas of the globe, but after returning from Scotland last week I am thankful it never gets that cold or that wet!

Dave and python

- Dave Canavan can be contacted at davidc@gardenbangkok.com. He contributes articles concerning natural phenomena to Education section of The Bangkok Post *every Tuesday.*

TIPS AND TRICKS

▲ Useful Tips for Writing 'Interesting' Technical Articles

Writing good technical articles is indeed a challenge, takes a lot of your personal time, requires doing a lot of research. And you should have a passion for writing and reading as well. If you don't like reading, trust me you will not be able to write either. Let's get to the 5 tips now.

1. First and foremost, you should have a fair amount of **expertise** on the topic you are writing. Never write an article on a topic that you are not confident. Make sure you work out all steps and give fair amount of information to your readers to know what needs to be done when things go wrong. Focus on this one topic, and make sure it is to the point. Include lots of working samples, with clear explanations. If you really want to write and have no clue where to start with, the best place to begin writing is in your own blog.

2. Writing Style and Title. Since you are writing a technical article, make sure the language is as simple as possible. This is to make sure readers who are not native English speakers are able to get a good grasp of your article without going back and forth to the dictionary. Let your article be reader friendly. Having a catchy title is very important to get the attention. This doesn't mean that you can have a title to grab the attention and the article itself doesn't even come closer to the title.

3. Writing a Rough Draft. We all have learnt in our Language classes that every article should have three sections; **introduction**, **body** and **conclusion**. Make sure you read it 2-3 times before you actually send it out for publishing. If you have a family member or a colleague, ask them to take a look. Always better to have a second pair of eyes, right?

4. Comments. Make sure if your readers have any questions or difficulties that you try to respond to them as quickly as possible. Always be on top of your article. Even if the comments are not appropriate, make sure you don't go into a war of words. Try to convey your message in a polite way, and if you think you can't be polite just don't respond.

5. Resources. Provide links to all articles you think will be useful for the reader to get additional information. This should be either at the end of the article or even better is to provide links when and where you are referring to them. If you have referred any books, list them as well. This will give a clear idea to the reader to look out for more details. **(Javalobby)**

▲ MOUSE TIPS (10 Tips for Using a Computer Mouse)

The following tips should help you avoid a mouse-related musculoskeletal injury. The same posture principles apply to other input devices (e.g. trackball, touchpad, pen, digitizing puck, etc.). Postural variation is a key factor for good ergonomics. Try to regularly vary your posture when you work with a mouse, and in this way you will help

to minimize the risk of ergonomic problems. Remember, the best ergonomic mice are designed to allow you to vary your posture while working with the mouse.

1. **Mouse Grip** – don't throttle your mouse (it's already dead)! Hold the mouse gently to move it over a mousing surface.
2. **Mouse from the Elbow** – don't skate or flick the mouse with your wrist. Make controlled mouse movements using your elbow as the pivot point and keep your wrist straight and neutral.
3. **Optimal Mouse position** – sit back in your chair, relax your arms then lift your mousing hand up, pivoting at the elbow, until your hand is just above elbow level. Your mouse should be positioned somewhere around this point. Don't use a mouse by stretching to the desk or out to the side of a keyboard. With a **flat mouse platform**, position this 1-2" above the keyboard and over the numeric keypad if you are right handed - you can easily move it out of the way if you need to access these keys. With a **downward sloping mouse platform**, position this close to the side of the keyboard so that you can use the mouse in a neutral wrist position. Position adjustable mouse platforms are commercially available (e.g. Humanscale, Proformix, Flexrest, 3M, etc.)
4. **Protect your wrist** - if you look at the anatomy of the wrist it is curved away from any contact surface (you can easily see this by resting your hand/arm on a flat surface - you'll see light under the wrist and can probably even pass a thin pen under this). The forearm is shaped liked this for the wrist to remain free of surface pressure contact.
5. **Avoid restricting circulation** - For many people there are exposed blood vessels near the skin at the wrist, which is where the pulse is often taken. Any pressure in this region will disrupt circulation into the hand and this will increase the risks of injury.
6. **Don't use a Wrist Rest** - research has shown that using a wrist rest doubles the pressure inside the carpal tunnel, because the floor of the tunnel is a more flexible ligament that transmits external pressure changes directly into the carpal tunnel (the roof of the tunnel is bone so the pressure doesn't get transmitted on through the hand). Indeed, one test for carpal tunnel syndrome (CTS), know as Tinel's sign, simply involves tapping on the palmar surface of the wrist, which is enough to cause tingling and numbness in someone developing CTS.
7. **Avoid Restricting Arm Movement** - with a softly padded wrist rest, especially one that is rounded, or a soft chair armrest the forearm becomes 'locked' into position and this encourages people to make mouse movements by flicking the wrist, which also increases intracarpal pressure.
8. **Keep the Mouse Free Moving** - The base of the palm of the hand is the part of the body designed to support the hand when resting on a surface. For keyboard use a broad palm support is best. However, mouse use is different from keyboard use. With a keyboard the best posture is for users to float their hands over the keyboard when typing and then to rest on the palm support in microbreaks between typing bursts. You can use rest-breaking software (e.g. Magnitude ErgoManager, Break reminder, etc.) to help track and advise on your mouse use. With mousing this doesn't happen. A mouse is used by moving its position over a surface, and resting usually occurs when mouse movements stop but with the mouse still being held in the hand. Mouse movements should be made using the elbow as the pivot point, not the wrist. Anything that impairs free movement of the forearm/hand and mouse will increase injury risks.
9. **Mouse shape** - choose a mouse design that fits your hand but is as flat as possible to reduce wrist extension. Don't use a curved mouse. Use a symmetrically shaped mouse. Consider a larger mouse and there are several new interesting products on the market, such as the Whale mouse or the Perfit mouse, that encourage arm rather than wrist movements or that encourage postural variety and one- or two-handed use. Pen-based mice designs also allow a more comfortable grip. Some types of mouse palm support can be attached to the mouse, such as the Mouse Bean.
10. **Load sharing** - if you want to load share between your right and left hands, that is using the mouse for some of the time with each hand. For this you need to choose a mouse platform that can easily be configured to the left or/and right, and a symmetrical shaped mouse that can be used by either hand.

Other input devices - whether you choose a different mouse design, a trackball, a joystick, a pen, a touchpad, a multitouch pad or some other input device, make sure that you position this comfortably, and that your wrist is in a neutral position when using the device.

Summary recommendations for mouse position:
If you are using your mouse on a surface then:

- **Best** arrangement for a mouse is a platform over the number keypad and just above the keyboard.
- **Good** arrangement is a pad on an angled platform to the side of the keyboard.
- **Poor** arrangement is a flat surface to the side of the keyboard
- **Worst** arrangement is on the desk out to the side of the keyboard.

Other input options that don't cover the numeric keypad
If you need to frequently use the numeric keypad consider the following:

- an angled mousepad close to the side of the keyboard (e.g. Humanscale platform; Flexrest platform)
- a keyboard that has a touchpad built into the keyboard (e.g. Crystal vision; Cirque smooth cat)
- a minikeyboard with either a built-in pointing device or an adjacent mouse and a separate keypad

From: Cornell University Ergonomics Web

LAUGHTER ZONE

Just to Laugh

An Indian walks into a bank in New York City and asks for the loan officer.
He says he's going to Europe on business for two weeks and needs to borrow $5,000.
The bank officer says the bank will need some kind of security for the loan, so the Indian hands over the keys to a new Rolls Royce.
The car is parked on the street in front of the bank, he has the title and everything checks out.
The bank agrees to accept the car as collateral for the loan.
The bank's president and its officers all enjoy a good laugh at the Indian for using a $250,000 Rolls as collateral against a $5,000 loan.
An employee of the bank then proceeds to drive the Rolls into the bank's underground garage and parks it there.
Two weeks later, the Indian returns, repays the $5,000 and the interest, which comes to $15.41.
The loan officer says, "Sir, we are a little puzzled. While you were away, we checked you out and found that you are a multimillionaire. Why would you bother to borrow $5,000?"
The Indian replies, "Where else in New York City can I park my car for two weeks for only $15.41 and expect it to be there when I return?"

Few nice/interesting words

“When one tugs at a single thing in nature, he finds it attached to the rest of the world.” – John Muir

"Opie, you haven't finished your milk. We can't put it back in the cow, you know." – Aunt Bee Taylor, *The Andy Griffith Show*

“To measure you by your smallest deed is to reckon the power of ocean by the frailty of its foam. To judge you by your failures is to cast blame upon the seasons for their inconstancy.” – Kahil Gibran, 1926 (introduced by Mike Fullen)

“Growing old is mandatory. Growing up is optional.” – Anonymous

WASWC members are requested to send news about anything concerning SWC, e.g. funds, awards, publications, websites, exhibitions, technical meetings, to publish with us by sending to sskukal@rediffmail.com, aroraspau@yahoo.co.in, and rmfowler@iafrica.com

Members/ Contributors for WASWC Newsletter

The contributions made by the following editorial members and other contributors are highly appreciated.

Menachem Agassi, *Israel,* yehu8666@gmail.com
Artemi Cerdà, *Spain,* acerda@uv.es
Sidney Clouston, *USA,* CloustonEnergy@aol.com
Will Critchley, *Netherlands,* wrs.critchley@dienst.vu.nl
Raymond D. Desjardins, *Canada,* desjardins@agr.gc.ca
Nahid Elbezzaz, *Morocco,* nahidelbezzaz@yahoo.fr
Wyn Ellis, *Thailand,* wynellis.gtzbkk@gmail.com
Mike Fullen, *U.K.,* m.fullen@wlv.ac.uk
Yantai Gan, *Canada,* gan@agr.gc.ca
Tom Goddard, *Canada,* tom.goddard@gov.ab.ca
Mohammad Golabi, *USA,* mgolabi@guam.uog.edu
Antonio J.T. Guerra, *Brazil,* antoniotguerra@gmail.com
Christine Hauert, Switz., christine.hauert@cde.unibe.ch
John Laflen, *USA,* laflen@wctatel.net
Yishan Liao, *China,* yishan_liao@163.com
C. Licona-Manzur, *Italy,* Clemencia.LiconaManzur@fao.org
Li Dingqiang, *China,* dqli@soil.gd.cn
Li Rui, *China,* lirui@ms.iswc.ac.cn
Victoria Mack, *Australia,* vmack@silc.com.au
Machito Mihara, *Japan,* waswc@nifty.com
Prasanta K. Mishra, *India,* pkmbellary@rediffmail.com
Ted Napier, *USA,* Napier.2@osu.edu
Yuji Niino, *Thailand,* yuji.niino@fao.org
Franco Obando, *Colombia,* fobando1@yahoo.com
James O. Owino, *Kenya,* joowin@yahoo.com
Hiromu Okazawa, *China,* h1okazaw@nodai.ac.jp
Martin Parkes, *China,* martinpa@gn.apc.org
Sam Portch, *Canada,* sportch@ppi-ppic.org
Horrie Poussard, *Australia,* poussard@thereef.com.au
S.K. Sharma, *India,* sks105@rediffmail.com
T. Francis Shaxson, *UK,* FShaxson@aol.com
Vir Singh, *India,* drvirsingh@rediffmail.com
Rhodri P. Thomas, *UK,* rhodri_p_thomas@hotmail.com
Prakash Tiwari, *India,* pctiwari@yahoo.com
Takashi Ueno, *Japan,* erecon-hq@nifty.com
Willy Verheye, *Belgium,* wlverheye@telenet.be
Kristie Watling, *Australia,* kristie.watling@nrm.qld.gov.au
Alex Watson, *New Zealand,* watsona@landcareresearch.co.nz
X.Z. Xu, *China,* xzxu@dlut.edu.cn
Dan Yaalon, *Israel,* yaalon@vms.huji.ac.il
Rob Youl, *Australia,* rob.youl@landcareaustralia.com.au
Guo Zixing, *China,* zxguo@soil.gd.cn

You may ask **sombatpanit@yahoo.com** about your membership status, i.e. up to which year you have paid. Then you may send your membership fee to either Bill or me or any other address in the following list:

a. Dr. William (Bill) C. Moldenhauer, Vice President (Assist. Treasurer), 2400 Sunrise Ridge Circle #107 Brookings SD 57006, USA. Phone: +1-605-6976470, Fax: +1-605-6279123 Attn: W.C. Moldenhauer, moldwc@itctel.com. He can receive money from US and Canadian members through Personal Check, Money Order, or Bank Draft **(payable to WASWC),** and can receive VISA and MasterCard credit cards and Bank Draft **(payable to WASWC)** from all over the world. *****For sending money through a bank, please give the following information to your bank:** United Bankers Bank, St. Paul, MN, USA; Routing Number (ABA Number) 091 001 322; **SWIFT Code: UBBKUS41**, For Benefit of First National Bank of Volga SD, Account No. 250-2334; Further Credit World Soil, Account No. 703-488.

b. Dr. Samran Sombatpanit, WASWC Immediate Past President, 67/141 Amonphant 9, Soi Sena 1, Bangkok 10230, Thailand. Phone/Fax: +66-25703641, sombatpanit@yahoo.com. He accepts Bank Draft from every country. **Mark the draft "payable to Dr. Samran Sombatpanit". He receives SWIFT through the Bangkok Bank, Bangkhen Branch, 2124 Phaholyothin Road, Jatujak, Bangkok 10900, Thailand. Phone: +66-25614091/ 25791146-8, Fax: +66-25791149. SWIFT CODE: BKKBTHBK, A/C No. 161-0-210864, which you should also indicate "payable to Dr. Samran Sombatpanit".**

c. Thailand: Mrs. Nongkran Maneewan, Land Development Dept., Bangkok 10900, Thailand, for sending from members in Thailand. **Savings A/C No. 039-1-01371-8, Krung Thai Bank, Samyaek Kaset Branch.** nongkran@ldd.go.th, kaek_nong@yahoo.com.

d. Japan: Dr. Machito Mihara, WASWC Deputy President, c/o Institute of Environment Rehabilitation and Conservation (ERECON), 2987-1 Onoji Machida-shi, Tokyo 195-0064, Japan. Phone/Fax: +81-42-736-8972, hq-erecon@nifty.com. He can receive all forms of payment from within Japan, and can receive Visa and MasterCard credit cards from all over the world (mark in all forms of payment **"payable to ERECON Japan"**). Payment is in Japanese yen only; see more details in www.waswc.org.

e. Serbia: Prof. Miodrag Zlatic, WASWC President, Faculty of Forestry, University of Belgrade, Kneza Viseslava 1, Belgrade. Serbia. Phone: +381-11-3553122 (o), +381-11-3583280 (h), +381-63661549 (m). He can receive money from the Balkans Region through the **Raiffeisen Banka AD, Beograd, Republic of Serbia, SWIFT code: RZBSRSBG, Customer's name: Zlatic Miodrag, A/C No. RS35265051000004691675.** mizlatic@yubc.net, mizlatic@yahoo.com**.**

f. United Kingdom: Dr. Mike A. Fullen, School of Applied Sciences, University of Wolverhampton, Wolverhampton WV1 1SB, U.K. Phone: +44-1902-322410, Fax: +44-1902-322680, M.Fullen@wlv.ac.uk. He can receive money from within the UK in pound sterling equivalent to the rates stated above. **Cheques should be made payable to the University of Wolverhampton.** You may use the most recent exchange rate for converting US$ into GBP.

g. Argentina: Eduardo Rienzi, Fac. of Agronomy, Univ. of Buenos Aires, Av. San Martin, Buenos Aires. **Banco Nacion, suc 0082 Nro 200388227 CBU 01100204-30002003882279.** rienzi@mail.agro.uba.ar

h. Kenya: James O. Owino, Dept. of Agric Eng., Egerton University, P.O.B. 536 Njoro. **SWIFT: BARCKENXANKE, Bank code: 003, Branch code: 027, Acc. No. 1214170, P.O. Box 66, Nakuru 20100.** joowin@yahoo.com

i. Brazil: Antonio Guerra, Avenida Jose Luiz Ferraz, 250, apartamento 1706, CEP. 22.790-587, Rio de Janeiro – RJ BRAZIL. **SWIFT: BRASBRRJRJO, Banco do Brasil – conta 652291-2; agencia 3652-8.** antoniotguerra@gmail.com

j. The Netherlands: WRS Critchley, ABN AMRO Bank, Gelderlandplein, POSTBUS 87091, 1080 JB Amsterdam. **Account number 549365478, BIC number = ABNANL2A, IBAN = NL28ABNA0470430559.** wrs.critchley@dienst.vu.nl

k. Indonesia: Syaiful Anwar, WASWC Indonesia Chapter (Masyarakat Konservasi Tanah dan Air Indonesia, MKTI, c/o Ministry of Forestry, Jakarta) with following account details: **Bank Mandiri cabang Jakarta Gedung Pusat Kehutanan; Account holders: Trisnu Danisworo, qq Zulfikar Ali; A/C No: 102-00-0437516-5.** sanwar@cbn.net.id

Other pay stations, pls contact following persons for more details:

l. Spain: Artemi Cerdà, Departament de Geografia, Universitat de València, 46010-Valencia. acerda@uv.es

m. Morocco: Mohamed Sabir, National School of Forest Engineers, BP 511 Salé. sabirenfi@wanadoo.net.ma

n. Mexico: Aurora M. Galindo, Corazon de la Tierra, c/o Lloyd Carret, Chapala-Jocotepec # 40, Ajijic, Jalisco 45920. auroramichel@hotmail.com

o. India: Surinder S. Kukal, Department of Soils, Punjab Agricultural University, Ludhiana 141004. sskukal@rediffmail.com

p. India: Suraj Bhan, Soil Conservation Society of India (SCSI), G-3, Nat. Soc. Block, NASC Complex, Dev Prakash Shastri Marg, New Delhi-110012. bhan_suraj2001@yahoo.com

q. South Africa: Rinda van der Merwe, Institute of Soil, Climate and Water, Private Bag X79, Pretoria 0001. rinda@arc.agric.za

r. Australia: Kristie Watling**,** Department of Natural Resources and Water, 203 Tor Street, Toowoomba Q 4350, (P.O. Box 318, Toowoomba Q 4350) Phone: +61-(0)7-4688 1092, Facsimile: +61-(0)7 4688 1487 Kristie.Watling@nrw.qld.gov.au, www.nrw.qld.gov.au

Note: For the convenience of all parties you are advised to sign up as a Life member or to pay for several years (e.g. 4 years and get 5 years) in one time. Contact sombatpanit@yahoo.com if you have any problem or for more information..

1. Individual membership: US$5/yr for developing countries; US$10 for developed countries and persons working in international organizations worldwide. Payment of the fee for 4 years at the same time will enable the membership to be valid for 5 years.

2. Life membership: US$80 for developing countries; US$160 for developed countries and persons working in international organizations worldwide

3-1. Organization membership (OM): For universities, research and implemental institutions, government agencies, NGOs, societies, associations and international organizations, etc. Persons belonging to an Organization member will receive the same online products and services as the other two above categories: $100/ yr for an organization with up to 150 persons; $150/ yr for an organization with up to 300 persons; $200/ yr for an organization with up to 500 persons; and $10/ yr for an additional 100 persons or part thereof. Local organizations in developing countries can request to pay at a lower rate.

3-2. Organization subscription (OS): is the same as the **Organization membership** but the organization wants to limit its involvement only as a **subscriber.**

3-3. Organization cooperation (OC): is the same as the **Organization membership** but the organization wants to limit its involvement only as a **cooperator,** without paying a fee. Any organization can be a cooperator for 1-2 years before deciding to join as OM or OS if desired.

4. Gift membership: US$5/ yr worldwide, to be purchased by anyone to give to colleagues, friends, students, etc.

PLEASE CONSIDER THE ENVIRONMENT BEFORE YOU PRINT THIS NEWSLETTER