

World Association of Soil & Water Conservation – WASWC



NEWSLETTER

Reporting global SWC news to you quarterly since 1983

In English, Spanish, French, Chinese, Portuguese, Bahasa & Russian

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WASWC Vision: A world in which all soil and water resources are used in a productive, sustainable and 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.

Conserving soil and water worldwide – join WASWC

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- ▶ **STOP PRESS: IWMI-SEA moves to Penang, Malaysia Jan 06 28**

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 sombatpanit@yahoo.com.

Message from the Acting President – Samran Sombatpanit

I received a beautiful greeting card from a good friend, Dick (Richard) Arnold (formerly of USDA-NRCS, CT9311@aol.com) so I am borrowing it to send to all WASWC members with my love during this holiday season. The poem is called WITH LOVE TO YOU. Enjoy!

With outreached arms to hold around thee
 extending the thoughts of delight it brings me
Inside this circle may comfort be one of the things
 you sense along with the friendship it brings
Today we exist, and tomorrow is a place to dream
 accepting Grace from the Great Being supreme
Hold me so that together we will not heed
 the unbridled passion of man's senseless greed

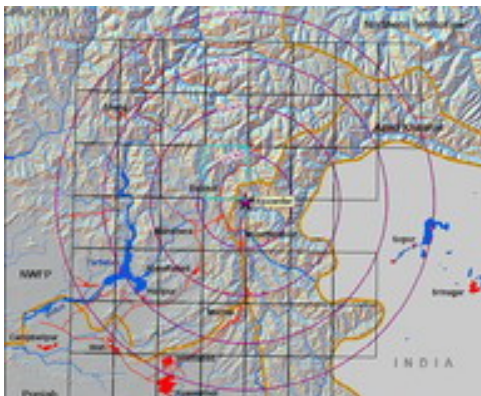
Listen to the melodies on heartstrings played
 feel the resonance of happiness there displayed
Open my heart to your needs and desires
 that we might share a strength that inspires
Vision a harmony of man and nature
 where all things exist sustainably with pleasure
Enter a new year with the wisdom of centuries past
 filling us with truth and compassion to last

To influence the frightening exponential growth trends
 of people, material goods, and wealth which offends
Our values of honesty, trust, and respect for others
 must again play a dominant role – like Mothers

You and I can make each 'hug' grow and grow with love
 because the purpose of humanity derives from above
Only the wise use of love and the glorious gift of free-will
 can resolve our hopes and our soul-dreams fulfill
Until we meet again, my friend so dear
 wishing you a meaningful and Happy New Year.



The past year has been so cruel to humanity, starting with the tsunami in South Asia, followed by hurricane Katrina in the Gulf coast of USA and the great earthquake in Pakistan and India's Kashmir region. Apart from that there have been floods, landslides and mudslides in many locations all over the world, causing much damage to life and property. Some people have connected the unusually high rainfall that has caused many catastrophes to the effect of global warming – we will have to wait and see if this is so.



As for the tragedy in Kashmir of October 8 (in the photo, the epicenter was in Pakistani Kashmir, not far from Indian Kashmir) where up to 70,000-80,000

died, the WASWC Council wishes to share the grief with the families of those who died and hopes that the relief operation will be implemented in good time, enabling those displaced not to have to bear the freezing temperatures of the Himalaya areas for too long.

It is fortunate for the victims of these huge disasters that financial help has come from a number of developed countries. The problem remaining is how to handle those funds efficiently and wisely. Technologies for rehabilitation seem to exist already. The expertise in land management and conservation of our former Deputy President, Dr Michael Zoebisch, has been tapped for use in the heart of the tsunami-hit area of Aceh Province, Indonesia, where we wish him luck in managing both land and the people's welfare. He would be glad to hear from us; just drop him a line at michael.zoebisch@dwhh.org. You might hear something as he will surely have first hand information on the farmland devastated by the intrusion of seawater.

Since 2002 our association has added many new activities – the reason being that we can now implement them by spending the money collected from membership fees. This has enabled us to support certain conferences and for some members to attend a few important meetings. These activities have, in turn, acted as catalysts to inspire many other things that allow us to reach WASWC targets faster, as described in our mission statement. Among several activities, developing good relationships with other organizations is considered a win-win action, since there is much synergy created. We make good friends with organizations that already exist and those coming up. For example, Prof. Georgi Gergov, our Vice President for East Europe, attended the 9th International Symposium on River Sedimentation in Yichang, China in October 2004 and delivered an important speech at the inauguration of the World Association of Sedimentation and Erosion Research

(WASER) and thus the friendship between the two associations has been established. The text from Prof. Gergov's speech can be found after this message.



Another important activity recently started by WASWC is the Norman Hudson Memorial Award, given to one outstanding international soil and water conservationist annually. Last year

Prof. Calvin Rose of Griffith University, Queensland, Australia was the recipient (see WASWC Newsletter issue 20/3). This year the Award went to Mr. Rolf Derpsch, a SWC consultant who specializes in No-Tillage Agriculture. The WASWC presented the Award to him at the 3rd World Congress of Conservation Agriculture in Nairobi last October where he was invited to give a keynote speech. Articles relating to the award ceremony will appear in the next issue. (In the photo on the left, Rolf receives the Award from Mr. Mundia Sinkatana, Zambian Minister of Agriculture.)

The next thing to discuss is: How can we excel in serving members fully? Our association is a global organization, with members in around 100 countries. We are certain that we

have a market, what we are producing will all be used, but what products and services should we create to make them as useful as possible and at an affordable cost? I earlier wrote about this concern at great length and wish to receive more inputs from our members. Since another four Councilors have been appointed from November 1, the new Council of nine is now considering this subject. Once we decide on this, we will let it be the direction that we will follow during our term, and even beyond. All members are invited to join us in thinking about this and to give us their ideas.

It is natural that every WASWC member should want his/her association to progress far and wide. As operating the association by posting the products on the website makes the work easy in terms of introducing people to us, we have for several months invited participants to several important conferences to be our Guest members for a period, so they will get to know us and then may wish to join us sometime later. I therefore ask all members again to please help publicize our association by introducing our websites (www.waswc.org, <http://waswc.ait.ac.th>, www.swcc.cn/waswc/) and username (waswc) and password (waswc8641) to those whom you know as well as to the organizers of conferences. The idea behind this is that those who know us will have a chance to sign up as members.

(Read more in the subsection ASSOCIATION NEWS. Members are asked to help draw in more Organizations to join our association.)

WASWC – WASER

Speech of Prof. Georgi Gergov delivered at the 9th International Symposium on River Sedimentation, Yichang, China. October 18, 2004, on the occasion of the launch of the World Association of Sedimentation and Erosion Research (WASER). Contact: WASER Secretariat, International Research and Training Center on Erosion and Sedimentation (IRTCES), P.O. Box 366, 20 Chegongzhuang Road West, Beijing, 100044, China; Tel: +86-10-68786413; Fax: +86-10-68411174; liuxy@iwhr.com, www.waser.cn/, or WASER President, Prof. Des E. Walling, d.e.walling@exeter.ac.uk.



*Your Excellencies,
The President,
Ladies and Gentlemen,*

I have the pleasure to address you on behalf of the World Association of Soil and Water Conservation (WASWC) and our president Dr. Samran Sombatpanit on the occasion of the founding of WASER (World Association of Sedimentation and Erosion Research). As it becomes clear from the names of both Associations we will gather together people working on very close professional topics – water conservation, soil conservation, soil erosion and sediment research. So, one might suppose, that we will work in close collaboration in organization of scientific meetings and conferences, in publishing new information and dissemination of knowledge and experience among our members. Anyhow, this is our first offer to WASER and we do hope it will be discussed soon for joint activities to perform in the future.



As a gift for your inauguration today, we will provide you with our quarterly Newsletter and a hard copy of the Proceedings of the Sofia Conference in 2003, which is devoted to the recent soil and water conservation practices and policy of the Balkan states. This hard copy will become a subject of bibliographical search at once.

The people who might be interested should have a look at the WASWC internet sites www.swcc.cn/waswc/, www.waswc.org and <http://waswc.ait.ac.th>.

Before I finish my talk I would like to heartily congratulate you for the successful establishment of the new Association, which we consider a valuable contribution to modern civil society.

I wish the Association and all its members a successful venture.

Prof. Georgi Gergov, Vice President of WASWC for Eastern Europe (g_gergov@internet-bg.net)

NEW OFFICERS

Richard Fowler, National Representative for South Africa, rmfowler@iafrica.com



After studying at the University of Natal, South Africa, Richard moved to Swaziland. There he worked for a number of years as a technical adviser, input supplier, farm manager and fresh produce marketer before returning to South Africa in 1984. Since that time he has worked for what is now that country's Agricultural Research Council's Grain Crops Institute. A weed agronomist, he has an abiding interest in sustainable natural resource management by especially the poor and marginalized. Secretary of the South and East African Association for Farming Systems Research-Extension (SEAAFSR-E), he is a founder member of both the South African Network of Animal Traction (SANAT) and the African Conservation Tillage network (ACT), for whom he started the e-Newsletter ACT NOW! Among other things he is at present consultant to the South African Conservation Agriculture Team, investigating ways of promoting the adoption of Conservation Agriculture principles in South Africa.

Ahmet Hizal, National Representative for Turkey, ahizal@istanbul.edu.tr

Ahmet Hizal was born in 1946 in Duzce, Turkey. He received a Bachelor of Science degree in Forest Engineering from the Forestry Faculty, Istanbul University, in 1969. He was awarded a diploma in Soil Erosion Survey from the International Institute for Aerial Survey and Earth Sciences (ITC) in the Netherlands in 1976. He received a Doctor of Philosophy degree from the Department of Soil Science and Ecology, Faculty of Forestry, Istanbul University in 1982 with a thesis entitled "A study on the application of aerial photo-interpretation to the watershed surveys". He became associate professor in 1986 and full professor in 1993 in the Department of Watershed Management, Faculty of Forestry of Istanbul University.



Currently he takes part in long-term projects in the Department of Watershed Management, teaches courses at undergraduate and graduate levels, supervises graduate students and is teaching courses in watershed management, soil erosion, soil conservation, remote sensing in watershed management, and land classification. He is married with one son. He has over 60 articles published in international and national journals.

Ole K. Borggaard, National Representative for Denmark, ole.k.borggaard@kemi.kvl.dk



Born 8. January 1943, married to Birgit with whom I have two children (Anne Mette and Søren). I am professor of soil chemistry and pedology at the Royal Veterinary and Agricultural University, Denmark.

My educational background is an MSc in pharmacy, a PhD in physical chemistry and a DSc in soil science.

I am a teacher or former teacher in chemistry, soil science, pedology, environmental soil chemistry and soil survey at various levels, bachelor, master and PhD level. My research activities are focusing on soil chemistry and pedology in relation to Danish and tropical soils. Soil composition and processes in relation to climate, parent material and soil use are studied with emphasis on soil acidification, mineral weathering and absorption of phosphate, heavy metals and pesticides. In addition to soils, iron oxides, humus and clay silicates are studied. I have written about 190 publications of which nearly one half are in international, refereed journals.

Apart from studying soils I like to visit art galleries with French impressionists, traveling and bicycling.

ASSOCIATION NEWS

Amending the Constitution and the appointment of four more councilors

The amending of the WASWC Constitution as proposed by the original WASWC Council was well received when we sent out the message in October. So now, with a few more suggestions from members the amendments have been made and the amended version is posted on our website. Consequently four more Councilors have been appointed since November 1, 2005, as follows:

Prof. Mohamed Sabir, National School of Forest Engineers, Salé, Morocco – as representative of Africa

Prof. Eduardo Rienzi, University of Buenos Aires, Argentina – as representative of America (Latin)

Prof. Ted Napier, Ohio State University, Columbus, Ohio, USA – as representative of America (North)

Dr. Ian Hannam, International Environmental Law and Policy Specialist, Newport, Australia, Representative of Australia

These four Councilors hold their offices up to the end of December 2007, when the term of the present Council ends.

We welcome all new Councilors and hope that in the future we will cover more widely and actively the work of WASWC so that it becomes more useful to members and, subsequently, benefits our natural resources.

The inputs from member Toshiaki Okura (Japan) and member Selina Camacaro (Venezuela) have been incorporated in the amended Constitution, which we greatly appreciate.

Group Discussion on Laws and Policies

This year has seen so many catastrophes all over the world, largely involving high rainfall and subsequent floods, followed by landslides and soil erosion on sloping land. In Thailand there has been an initiative to strengthen the existing Land Development Law to make it binding for farmers to conserve their land, initially by tilling along the contour lines. In

October I made an appeal to members to help send law and policy materials to us to initiate the activity in our association as well as to help Thai authorities in amending their Land Development Law.

Several members have responded and now we have received more than 20 law and policy papers to post on the website. The contributions were from Belgium, Brazil, China, France, Moldova, Nepal, New Zealand, Sri Lanka, Thailand, The Netherlands, UK, USA and Venezuela. We thank all contributors and still look forward to receiving more papers especially from members in the countries not mentioned in this note. Members are welcome to browse through these papers in <http://waswc.ait.ac.th/law-policy.html>.

It is likely that WASWC will soon sponsor a group discussion by e-mail on Laws and Policies concerning land, soil and soil conservation, along with some other related issues. You are welcome to join this work to benefit resources and society in various parts of the world. Please stay tuned!

Members are asked to help draw in more Organization members

Most members would know that our association is not well funded; many members have not paid their dues recently. But that was not due entirely to their intention or negligence. Difficulty in sending a small amount of money between countries has been a huge obstacle since our inception; the bank fee to send \$5 or \$10 is normally much more than the amount to send itself. Our efforts to establish our outposts in various countries in the form of the Decentralization Program (DP) have met with some success, but only partly. Few countries report their performance to us annually while the number of members in most other countries still remains low, as low as when they started the DP 2-3 years ago.

Photo website, already hit more than 100,000 times

Since we started our photo website <http://community.webshots.com/user/waswc> in June 8, 2004 it has proved very popular with members and non-members. Up to this month the photos on the site have been visited 100,000 times already (to be exact, on December 19, 2005). As the number of photos posted on it had reached the maximum limit of 3,000, we have therefore opened a new site at <http://community.webshots.com/user/waswc1> and all new entries, including those entering the competitions, will be posted there.

Operating photo websites is a good investment – we pay a rental fee of only \$29.88 per year to Webshots.com for posting 3,000 photos – and we recommend national and regional organizations to do the same as it will benefit many more people in your country as well as others.

Winner of 4th Photo Competition: Winners are:



Left: **Jean-Louis Allard**, Syngenta, Switzerland. *Title:* Long-term benefit: Improvement of soil fertility after 10 years of no tillage in China

Center: **Suraphol Chandrapatya**, IWMI-SEA, Thailand. *Title:* Gully erosion at Plain of Jars Site 3, Xiang Khuong Province, Lao P.D.R.

Right: **Tran Duc Toan**, National Institute for Soils and Fertilizers, Vietnam. *Title:* Experimental weir for soil erosion and conservation research in Vietnam

All photos are posted on the website <http://community.webshots.com/album/378351042GmtSnC>. Winning authors are asked to browse through the website, www.scipub.net, and choose the book they would like to have as their prize.

While trying to solve the problem of the slowness of entry of Individual members, the Council agreed in July this year to a new fee structure to bring in more subscriptions from Organization membership, such as universities, research institutions, government agencies, non-government agencies, societies, associations, the membership fee for which will be less than 1 dollar/ person/ year. As members of those organizations will become our Associate members and receive the same benefits as those in other categories, this kind of membership is good value for professional organizations, such as soil science societies, soil and water conservation societies, natural resource management societies, etc. Members are therefore kindly asked to find out if they can help invite-cum-recruit those establishments to join us as Organization members.

At present we see this type of membership as a win-win tool; it helps spread our work to more people in more locations and, at the same time, the modest amount of money obtained helps support the various functions of the WASWC. Our rates for Organization members in developed countries and international organizations are as follows:

- for an organization up to 150 members, \$100/ yr,
 - for an organization up to 300 members, \$150/ yr,
 - for an organization up to 500 members, \$200/ yr, and
 - beyond that, each additional 100 members will pay \$10/ yr.
- Organizations in developing countries are asked to pay only half of the above rates.

Your help in encouraging more organizations to sign up will be much appreciated and it will illustrate that WASWC is a real member-for-member association.

Financial report for 2004

Report of the Revenues and Expenses (US\$) of the Year Ended December 31, 2004

Items	Year ended December 2004	Items	Year ended December 2003
REVENUES		REVENUES	
Dues		Dues	
- USA Office	3,165.52	- USA Office	1,750.00
- Bangkok Office	3,717.50	- Bangkok Office	2,161.02
- Beijing Office	321.00	- Beijing Office	60.00
Contributions		Contributions – USA Office	<u>215.00</u>
- MF	10.00	Total revenue	4,186.02
- Developing Country Fund	45.00		
Other revenue – SEMEATO Brazil	<u>1,000.00</u>		
Total revenues	8,259.02		
EXPENSES		EXPENSES	
- Office expenses	1,627.70	- Expenses of Bangkok office, 1 st quarter (Jan-Mar 2003)	594.26
- Communications & Internet	776.96	- Expenses for Bangkok office (Apr-Dec 2003)	1,177.07
- Printing of SP II	769.23	- Purchase of non-expendable materials	2,313.58
- Support to officers' travels	<u>4,547.37</u>	- Purchase of expendable materials	1,063.38
Total expenses	7,721.26	- Service fee for terminating WASWC activities in USA	1,950.41
		- Support to conferences and officers' travels	<u>2,093.50</u>
		Total expenses	9,208.58
		Increase (decrease) in fund balance	(5,022.56)
Remaining fund from Dec 2003	2,878.59	Remaining fund from SWCS	7,901.15
Ending fund balance	3,416.35	Ending fund balance	2,878.59
<i>To be put into following Funds:</i>			
- Moldenhauer Fund	1,385.00		
- Developing Country Fund	498.00		
- Life Membership Fund	<u>1,000.00</u>		
Total of Funds	2,883.00		
Transfer to Budget Year 2005	533.35		

Note: 8,259.02 + 2,878.59 = 11,137.61 – 7,721.26 = 3,416.35

Members interested in the details of certain items in this table are welcome to enquire from our Treasurer, Dr. John Laflen, laflen@wctatel.net.

MEMBERS' FORUM



(SWCS) in USA for his international work in the field of watershed management and soil conservation. Many of his technical publications have been translated into Spanish and French to be used in many developing countries around the world.

Congratulations to **Ted Sheng**, a recipient of the "Lifetime Achievements Award". In the photo, he is receiving the Award from H.L. Wu, President of the Chinese Soil and Water Conservation Society on November 16, 2005 at Taipei, Taiwan, for his long time contributions. In 1991, Ted also received the prestigious "Hugh Hammond Bennett Award" from the Soil and Water Conservation Society

Ted has been a WASWC member since the inception of the Association. He celebrated his 80th birthday in November 2005. (teds@lamar.colostate.edu)

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Dear Samran,

Following are my contributions:

I. Malcolm Douglas described the agreement reached on a good translation of 'Land Husbandry' into a set of Chinese characters: “把思想从水土保持转到土地营育”

This is from the 8th Issue of ENABLE – The Newsletter of the Association for Better Land Husbandry (ABLH), September 1998.

II. Some of the articles published in some of the past issues of ENABLE are to be found on the website of the Tropical Agriculture Association (UK), www.taa.org.uk. You will find them by clicking the small box 'PUB PAPERS' on the left-

hand side of the first page 'FRAMESET'. They are identified by the yellow stripes and entitled 'ENABLE'

III. I thought the attached note might be of interest to members. It is in Portuguese with an English version. It is the way we should all be thinking, and it should be a challenge to researchers to work on the idea!

“Tempo para Reflexão...”

Tivemos, em um passado não muito distante, um conceito agrônomo que utilizava uma fórmula matemática para calcular as perdas de solo no processo produtivo agrícola – a Equação Universal de Perdas do Solo. Atualmente, com a adoção do Sistema Plantio Direto na Palha, podemos desenvolver um novo conceito – uma Equação Universal de Formação de solos”.

Mauricio Carvalho de Oliveira, MAPA (Brasil).

“Time for Reflection”

“Not very long ago, we used to have an agronomic concept that used a mathematical formula to calculate losses of soil in the processes of agricultural production – the Universal Soil Loss Equation. These days, with the adoption of the system called Direct Planting through Plant Residues, we can develop a new concept – a Universal Soil Formation Equation”.

Mauricio Carvalho de Oliveira, MAPA (Brazil).

[from 'Direto no Cerrado' (Newsletter of the Association of Direct Planting in the Cerrado – APDC) August/September 2005, p. 12 – www.apdc.com.br – translated by Francis Shaxson].

Francis Shaxson, Dorset, England (fshaxson@aol.com)

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Dear Samran,

Thank you for keeping us informed about the latest developments. I appreciate the idea of Guest membership. I am sure it will rekindle the spirits of many members. I personally would like to become a member. How do I go about sending the money?

I am writing a paper which should be ready by December. I will send it to publish in the JWASWC. What is the procedure for sending?

Do you know of any organization that may give financial support for soil erosion and conservation related research? I am developing a proposal entitled “Sand Harvesting and Its Implication on Food Security”. Kindly assist if you can.

Sorry for asking too many questions. Have a blessed day.

- Dorothy Mutisya, Kenyatta University Nairobi, Kenya
nmdorothy@yahoo.com

Answer: You may send the membership fee to James Owino, our NR for Kenya (joowin@yahoo.com). His bank account number is in the application form on the website.

Please access our websites www.waswc.org and <http://waswc.ait.ac.th> and open the page JOURNALS where you will find the instructions on how to prepare and send your paper to the Editor-in-Chief.

For the question of “Organizations that may give financial support for soil erosion and conservation related research”, we need to ask all other WASWC members. Those who know, please kindly give some hints to Dorothy and others who need such help – with thanks from all of us. – Ed.

+++++

Dear Samran,

I have a sentence about the importance of the soil and I would like to suggest that you use it in your website, if

possible. The sentence is: “Love the soil, because our endurance is related to its performance.”

- Ghorban Ali Roshani, Soil and Water Research Center, Gorgan, Golestan Province, Iran.

Following is a summary of a response from Menachem Agassi (yehu8666@gmail.com), NR for Israel (Continued from issue 21/3)

Impressions and thoughts related to the International Symposium on 25 Years of Assessment of Erosion

This interesting symposium was held in Ghent, Belgium, 2003.

I share with David Sanders the impression that “little of what was presented in the symposium would provide answers to practical problems”, a question raised by Mr. de Croo who represented the farmers’ cause. Unfortunately, this was not a unique problem to this symposium and it is very rare to find new practical ideas at most conferences.



We also have to realize that the acceptability, by the farmers, of the common methods is rather poor and we have to ask ourselves why?

Before trying to answer this question, I believe that we should try and learn from the great success of the adoption of the minimum tillage method in Southern America.

* One of the main reasons for low acceptability of soil conservation methods (SCM) is the inability to quantify to the farmer the financial benefits of applying soil conservation practices.

* The major problem of low acceptability of SCM is very complicated, involving financial and social aspects.

* The efficiency of the common SCM is questionable.

* Still, after so many years of intensive studies of the soil erosion processes, the available tools for the planner of soil conservation projects are still not satisfactory. We do not have a reliable method to measure soil erosion in the field as a yardstick to evaluate the necessity of SCM

* It is very delicate issue but the impression from international conferences and professional journals is that much more attention is directed into basic than applied research.

* Another less important problem is that many of the scientists who are investigating the soil erosion phenomenon are from the geography or soil engineering disciplines and usually they do not have a common language with the farmers and they are not aware of their day-to-day problems and needs.

What should be done?

* In regions where water is the limiting factor for crops, the water conservation approach should be adopted instead of the soil conservation approach.

* Workshops and symposia are needed to discuss the reliability of soil erosion measuring devices and to reach some world-wide accepted standardization that will make it possible to compare results and improve the quality of the measurements.

* Extension services must improve and extension officers should be encouraged to participate in research programs together with the farmers whenever possible. Scientists should publish their findings also in professional, non-reviewed local journals that are read by farmers.

* The use of soil management approached SCM should be encouraged instead of the engineering approached SCM, e.g. minimum tillage instead of terraces.

* The development of cheap and environmentally friendly soil conditioners and geomembranes should be encouraged. Some soil conditioners are very efficient against the destructive impact of raindrops and the ensuing runoff and erosion but these materials are still too expensive to be used commercially in arable lands. The same applies for permeable geomembranes, although some of them can be used routinely for more than 8 years.

* The use of earthworms and other beneficial ground biota should be encouraged as the contribution of these biota to soil fertility and conservation is not yet fully acknowledged and exploited.

* Appropriate legislation to prevent soil erosion is required in countries where it does not already exist.

SHORT NEWS on conservation-environment

Edited by Alex Watson, Landcare Research Institute, Christchurch, NZ (watsona@landcareresearch.co.nz)

World Soil Day, December 5 – IUSS Alert No. 8, December 2005

In 2002, the International Union of Soil Sciences (IUSS) made a resolution to propose the 5th of December as World Soil Day to honor His Majesty King Bhumibol Adulyadej of Thailand for his promotion of soil science and soil resources conservation. The 5th of December is the birthday of His Majesty. Since then the IUSS has initiated various activities to proclaim 5th December as World Soil Day. World Soil Day will be used to advocate the use and need of soils for human survival and its sustainable management. We aim to draw more attention to the natural resource on which all life depends: the soil!

CLIMATE CHANGE

Climate change linked to rise in malaria, asthma, Nov 03, 2005 — Timothy Gardner, Reuters

NEW YORK — Climate change may promote the spread of deadly diseases like malaria in both rich and poor countries by increasing the range of parasitic insects. Rising temperatures increase the range of the mosquitoes and ticks that carry maladies like malaria, West Nile virus and Lyme disease. "As climates warm, malaria is becoming more common in the traditionally cool mountains of Africa, Asia and Latin America," said Dr. Paul Epstein, the lead author of the report "Climate Change Futures. Colonizers escaped to the mountainous areas to avoid the swamps that bred malaria. The report indicates these areas are no longer safe.

In addition, climate change's stronger winds increase the amount of airborne dust derived from expanding deserts, which compound the effects of air pollutants and hence the risks to asthma sufferers. Cases of asthma can increase from greater amounts of CO₂, the report said. Plants high in pollen and some soil fungi grow better with higher levels of the gas.

Water vapor may be biggest contributor to higher global temperatures, researcher says, Nov 10, 2005 — Bradley S. Klapper, AP

GENEVA — An unexpected greenhouse gas – water vapor – may be the biggest factor contributing to higher global air temperatures. "Water vapor is a greenhouse gas," said Swiss researcher, Rolf Philipona. "Wherever you have an increase in water vapor, you have an increase in air temperature."

A study led by Philipona found that temperatures in the Alps have increased by about 1.40 C since 1980, but rose rapidly after 1995 – increasing a full degree - which coincided with a rise in water vapor level of 4 percent. "Manmade greenhouse gases such as carbon dioxide, methane and ozone had a direct contribution of only about 30 percent to this rapid increase in temperature," Philipona said. "The other 70 percent was increased levels of water vapor."

Most water vapor in the air occurs naturally, but we restrict the problem by limiting carbon dioxide emissions, which heat the earth's surface and cause greater water evaporation.

US defends decision not to join Kyoto Protocol as environmental conference begins, Nov 29, 2005 — Beth Duff-Brown, AP

MONTREAL — The 10-day U.N. Climate Control Conference is considered the most important gathering on global warming since Kyoto, bringing together thousands of experts from 180 nations to brainstorm on ways to slow the alarming effects of greenhouses gases.

Leading environmental groups spent the first hours of the conference blasting Washington for not signing the landmark 1997 agreement that sets targets for reducing greenhouse gas emissions around the world.

The United States defended its decision not to sign the Kyoto Protocol, saying that Bush had committed to cutting greenhouse gases some 18 percent by 2012. And that they are doing more than most countries to protect the earth's atmosphere by spending more than \$5 billion a year on efforts to slow the deterioration of the earth's atmosphere by supporting climate change research and technology.

EU study finds climate change major environmental challenge for Europe, Nov 30, 2005 — AP

BRUSSELS, Belgium — Climate change is Europe's biggest environmental challenge, as temperatures rise a third faster than the global average, according to a report by the EU's environmental agency. Europe's 20th century average temperature rose by 0.95°C, with 2002, 2003 and 2004 being the three hottest years on record.

The report, a five-year assessment, says 10 percent of European alpine glaciers disappeared during the summer of 2003 and at current rates, three quarters of Switzerland's glaciers are expected to have melted by 2050. Europe has not seen climate changes of this scale for 5,000 years and without effective action over several decades, global warming will see ice sheets melting in the north and the spread of deserts from the south.

The loss of biodiversity is a fact, species are disappearing. Past EU environmental legislation has worked, the report says, but it has taken 10 to 20 years to deliver results, and the pace of environmental destruction is faster than EU policy changes.

UN talks adopt Kyoto rules on global warming, Dec 01, 2005 — Alister Doyle, Reuters

MONTREAL — Countries meeting at U.N. environmental conference adopted rules for limiting emissions of greenhouse gases under the U.N.'s Kyoto Protocol. The Protocol is now fully operational and obliges about 40 rich nations to curb their emissions of heat-trapping gases by 2012.

The Montreal meeting agreed to all but one of the 22 sections of the rules but Saudi Arabia, the world's biggest oil exporter, held up a key section on policing the accord. Saying it wanted rules on compliance to be approved by an amendment to be ratified by all nations, a process that could take years. Saudi delegates argued that an amendment would give the deal more legal teeth.

Environmentalists accused Riyadh of trying to bog down Kyoto, driven by dislike of a scheme likely to force a shift away from oil toward cleaner energies. They pointed out that Saudi Arabia aligned itself with the United States, which is not a member of Kyoto, when opposing any discussion of what to do after 2012.

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ENERGY

Graduate student believes wood may replace oil, Aug 04, 2005 — AP

MOSCOW, Idaho — A University of Idaho student believes the answer to the world's crude oil crisis grows on trees. Juan Andres Soria says he has developed a process that turns wood into bio-oil, a substance similar to crude oil. Though the idea may sound far-fetched, the theory has some precedent in nature — coal is the result of trees being subjected to high amounts of heat and pressure.

"The process, in which sawdust and methanol are heated to 900 degrees Fahrenheit to create the bio-oil, is already drawing some interest from energy and wood product companies," Soria said. "So far, oil grades have been identified that could someday replace gasoline, tar, glues and resins. The trick is to speed up the process. Rather than doing it in millions of years, can we do it in minutes?"

Scientists try to harness wave energy, Aug 26, 2005 — AP
GARDINER, Ore. — As the price of oil continues to surge, scientists are turning to the ocean as a possible source of alternative energy. The potential for harnessing the power of waves has drawn serious study by Oregon State University and other agencies and communities along the Oregon Coast. Groups hoping to begin work on experimental technology are considering the International Paper mill site in Gardiner.

"There's a really good chance that Oregon could turn into a US focal point for wave energy development", said Alan Wallace, Oregon State University professor of electrical engineering. "We have a lot of momentum going for it. The plan is to take over the site to make it a showcase for a renewable ocean extraction system. There is tremendous potential in the oceans to supply energy for the world. A 10-square-mile wave power plant could supply the entire state of Oregon," he said. "Electricity from the Gardiner site could be transmitted to other stations up and down the coast."

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ENVIRONMENT

Shuttle commander sees wide environmental damage, Aug 05, 2005 — Jeff Franks, Reuters

HOUSTON — Commander Eileen Collins said astronauts on shuttle Discovery, orbiting 220 miles above the Earth, had seen widespread environmental destruction and warned that greater care was needed to protect natural resources.

"You can see there is erosion, and you can see there is deforestation. It's very widespread in some parts of the world," Collins said. "We would like to see people take good care of the Earth and replace the resources that have been used."

Collins, making her fourth shuttle flight, also observed that the atmosphere looked almost like an eggshell, so very thin. She said, "We know that we don't have much air and we need to protect what we have. Our view from space made clear that Earth's atmosphere must also be protected."

Tiny Uruguay pressed by neighbor to halt pulp mills, Aug 10, 2005 — Louise Egan, Reuters

GUALEGUAYCHU, Argentina — Gualeguaychu used to be a sleepy Argentine town. That was before two European companies, drawn by a ready supply of eucalyptus trees and proximity to Asian and North American markets, decided to build some of the world's largest pulp mills on its doorstep in neighboring Uruguay. Now it's a hotbed of protest as farmers, ecologists and politicians aim to block the projects. Their opposition to the mills has also caused a diplomatic feud between the two countries.

Uruguay approved the combined investment of \$1.7 billion to produce 1.5 million tons of wood pulp on the banks of the Uruguay River, a natural border between Uruguay and Argentina. Legally, Argentina has a say in any development affecting the Uruguay River, which is jointly administered via a bilateral treaty.

Uruguay's Environment Minister has defended the companies so far, but vowed to confront them if a proposed study reveals any environmental risk. "If these plants are dangerous and are not compatible with the region's biodiversity, then we will not hesitate to shut them down," he said.

Indian state bans sale, use of plastic bags, Aug 25, 2005 — Ramola Talwar Badam, AP

BOMBAY, India — The government of the western Indian state of Maharashtra has banned the manufacture, sale and use of all plastic bags. Manufacturers and stores selling plastic bags will be fined 5,000 rupees (US\$111; €92), while individuals using bags face penalties of 1,000 rupees (US\$22; €18). Other Indian states have already banned the use of thin plastic shopping bags.

The ban was prompted by the indiscriminate use of plastic bags, which blocked sewage and drainage systems during the record monsoon rains in July. Debi Goenka, a Bombay environmentalist said, "The ban is long overdue and very welcome, but was not enough. To say the flooding was just because of plastic bags is stupid. This has to be a first step." Environmental groups have demanded preservation of open spaces and regular cleaning of drains and garbage.

Cambodia introduces battery-powered bicycles for tourists visiting Angkor complex, Nov 09, 2005 — AP

PHNOM PENH, Cambodia — The Cambodian government began offering 300 battery-powered bicycles for tourists to rent while visiting the world-famous Angkor archaeological park, Cambodia's main tourist attraction.

The introduction of the environmentally friendly transportation is part of the government's efforts to reduce noise and pollution in and around the majestic 12th century former capital, said Seung Kong, deputy director-general of a government agency managing the centuries-old site in the northwestern province of Siem Reap. "Our main objective is to reduce the use of automobiles that produce smoke," he said.

The bicycles were bought for US\$190 (€162) each from China and more will be ordered if the current project proves popular. Bicycles are rented out during daylight hours for US\$4 (€3.4) per visit. There are 14 repair stations within the park where tourists can have bicycles fixed or their batteries recharged.

Chinese oil firm apologizes for polluting water supply in northeastern city, Nov 25, 2005 — Joe McDonald, AP

CHINA — China's biggest oil company apologized for an explosion at a chemical plant that sent a toxic slick of benzene flowing through the city of Harbin and forced the local government to cut off running water to 3.8 million people. The explosion killed five people and forced the

evacuation of 10,000 others. Authorities blamed the accident on human error.

The government did not publicly confirm that the Songhua River had been poisoned with benzene until 10 days after the explosion. But local officials and companies were told as soon as the spill was detected and stopped using river water. The decision to cut off Harbin's water supply set off panic buying of bottled water, milk and soft drinks. It was estimated that it would take about 40 hours for the chemical to pass the city.

The disaster has highlighted the environmental damage caused by China's sizzling economic growth and complaints that the secretive communist government is failing to enforce standards meant to protect the public.

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DEGRADATION

Deforestation doesn't trigger floods, UN report claims, Oct 13, 2005 — Alister Doyle, Reuters

OSLO — Deforestation is often wrongly blamed for causing floods. "There is no scientific evidence linking large-scale flooding to deforestation. The frequency of major floods in the past 120 years, back to when forests were abundant, has been stable worldwide. That implied that deforestation was not a cause of flooding," said a report from the Food and Agriculture Organization (FAO) and the Indonesia-based Center for International Forestry Research (CIFOR).

The report said that some governments cling to the myth that forests help prevent floods to let policymakers blame loggers or small farmers for their own failure to anticipate the effects of heavy rains on dams or cities downstream. Tree roots were too shallow to prevent major mudslides like those that recently entombed hundreds of people in Guatemala. And it was incorrect to believe that forests acted as giant sponges that soak up water and release it during dry seasons. After heavy rains, excess water runs off waterlogged forest floors like off other surfaces.

Still, it said, forests could play a role in minimizing water runoff in some localized floods but did not have an impact on severe widespread floods.

World forest losses slowing but still alarming, UN says, Nov 15, 2005 — Crispian Balmer, Reuters

ROME — Approximately 13 million ha of the world's forests are destroyed each year, although the net loss of trees has finally slowed thanks mainly to new plantations. The U.N. Food and Agriculture Organization (FAO) said its Global Forest Resources Assessment was the most exhaustive survey undertaken, covering 229 countries and territories.

The net loss of forests from 2000-2005 was 7.3 million ha/ yr, against 8.9 million ha/ yr from 1990-2000. South America suffered the largest net annual loss between 2000 and 2005 of around 4.3 million hectares. By contrast Asia moved from a net loss to a net gain, thanks mainly to large scale planting in China.

However, environmental groups accused the FAO of playing down the devastation of the world's most important forests. Saying that FAO continues to emphasize the net forest loss numbers and that this is misleading because most of the world's most valuable forests, especially in the tropics, are vanishing as fast as ever. The net figures are used for global decision-making on the world's most important ecosystems. They fear that decisions are going to be made based on bad data.

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WATER

China dam project tests new environmental policy, Oct 25, 2005 — Chris Buckley, Reuters

BEIJING — Chinese plans to turn the Nu River in southwest Yunnan Province, with up to 13 hydro-power stations, into a

hydro-electric hub has sparked a war of words about national priorities.

Supporters say that the project, which could take more than a decade to build, would generate more power than the mammoth Three Gorges Dam, bring electricity and jobs to this remote corner of China and ease pressures on the environment by cutting pollution from coal-fired power stations, which supply three-quarters of China's electricity.

But opponents claim it will tear the region's delicate social and environmental fabric apart with little benefit to locals. They urge the government to release studies of the dams' environmental impact to allow greater public debate.

The unusually open controversy over the Nu River's fate is emerging as a test of the government's openness and priorities, just a week after it released a draft five-year development plan urging a halt to environmental destruction while still pushing for rapid economic growth.

China's biggest desalination plant opens amid efforts to ease water shortage, Nov 07, 2005 — AP

BEIJING — China's biggest seawater desalination plant has begun operations at a power station on its southeastern coast amid efforts to ease nationwide water shortages. The facility in Yuhuan County in Zhejiang Province, south of Shanghai, can produce 1,440 tons (374,400 gallons) of fresh water per hour for use in generating electricity, the official Xinhua News Agency said.

China's government announced a target of using desalination to produce up to 1 billion liters (250 million gallons) of water per day by 2010 for industrial use in coastal areas.

That would cover 16-24 percent of the water needed by factories, power plants and other industrial facilities in those areas.

The government says China is among the world's driest countries when measured in terms of water supply per person for its population of 1.3 billion. Hundreds of cities and towns regularly suffer drinking-water shortages.

Bangladesh's rivers are both curse and lifeline, Anis Ahmed, Nov 18, 2005

The mighty Teesta river, that swept away farm laborer Mohammad Taheruddin's home 10 times in the past five decades is now a picture of calm. But barely two months ago, many rivers in the low-lying South Asian country burst their banks, destroying government built flood shelters and washing away stretches of highway.

The Teesta is one of more than 150 rivers that criss-cross densely populated Bangladesh, affecting the lives of millions. More than 50,000 people on average lose their homes every year through flooding. But the rivers are also a lifeline for the impoverished nation of 140 million people. For most Bangladeshis, the rivers provide the only valid mode of transport across the country, "We cannot live without the rivers," said Nasimun Nahar, 55. "They give us our sources of living – fishing, sailing and ferrying merchandise. Without them we wouldn't have even a single meal."

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REHABILITATION

Iraq's devastated marshlands recovering fast, UN says, Aug 24, 2005 — Andrew Cawthorne, Reuters

NAIROBI — The ancient Iraqi marshlands, drained by Saddam Hussein in the early 1990s, as punishment against the Marsh Arabs, accused of supporting a Shi'ite Muslim uprising after the first Gulf War, are back to almost 40 percent of their former level.

In a rare good news story for Iraq, the latest satellite imagery shows a "phenomenal" recovery rate for the southern marshlands, back to almost 3,500 sq km after dwindling to just 760 in 2002. A combination of dams and

canals turned what was once a pristine, wetland ecosystem into semi-desert and forced all but 40,000 of the area's 450,000 inhabitants to flee. After the March 2003 war the residents started to return.

While the reflooding is positive for the environment, the region remains Iraq's poorest. More than half the population is unemployed, there are barely any primary schools and electricity is available for just one hour a day.

FEATURES

Conservation Agriculture Highlights **Conservation Agriculture Program Comes to a Close,** Sept 01, 2005 — Mikkel Pates, Agweek Magazine

An experimental program in North Dakota demonstrated economic, environmental and social benefits of "holistic" farming practices. The four-year sponsored program cost \$1.1 million and partly paid farmers for completing conservation measures.

Each farmer had > 400 ha and worked under a "whole farm plan" developed voluntarily with a local, volunteer six-member resource analysis team. They helped farmers obtain conservation implementation funds from available federal, state and local programs. Farmer-cooperators were chosen for landscape and enterprise diversity (crops, livestock, grass).

Conventional farm analysis focuses on economics, but this program also studied quality of life and ecological impacts. It was an on-farm test of part of the US 2005 Conservation Security Program farm bill.

The advisory board created 10 program practices including conservation tillage, wetland bank, saline wetland buffer, stream bank buffer, grass on prime farmland for erosion control, flood storage or recreational benefits and a legume program for various purposes, including erosion control.

Some results:

Buffer wetlands increased bird diversity over time, while cropped and CRP wetlands remained essentially the same. Invertebrate numbers and diversity were largest in wetlands with grass buffers, opposed to CRP and crops.

Organic carbon increased for all three wetland types. Statistically significant increases only occurred on Conservation Reserve Program sites. CRP uplands and wetlands increased carbon storage 22 to 24 percent over the four years. Annual net change in carbon stored in wetlands from 2001 to 2004 was 1.2, 5 and zero tons per acre, respectively, for wetlands surrounded by buffer, CRP and crops.

There are few clear program economic impacts because time was short and yearly farm income varied substantially. For three out of four farmers, farm debt declined during the period while all four had lower-than-regional debt averages. Conservation payments as a share of total government and conservation payments were 45.8 percent of total payments, for 2004, dramatically higher than regional averages. In one case, major economic impacts were from incentive payments. A secondary impact was reduced fuel costs.

Farmers increased reduced-till and no-till practices and financed equipment with incentive payments. It wasn't clear whether they would keep buffer strips after the program ended.

Interviews with farmers revealed all improved crop residue management by reduced tillage practices saved money on fuel and equipment wear and they felt positive from learning new ideas. Some learned more site-specific information about fields using IPAQ, GPS and soil testing. Some saw immediate economic benefits through reduced costs or new subsidies.

Project staff made recommendations for local, state and federal levels from lessons learned, worked on solutions having immediate positive impacts for farmers and the

environment, while striving for long-term impacts – the bigger program goal.

Water Issue Highlights **New Dams Destroying Water Sources and Damaging Economies, WWF Says,** Nov 14, 2005 — Sam Cage, AP

New dams intended to provide cheaper power and support irrigation systems destroy important water sources and cause economic disruption, a leading environmental group said.

The World Wide Fund for Nature noted dams can destroy wetlands from holding water like sponges and cannot be replicated by man made facilities.

The world's ailing rivers and dependant communities face a bleak future without prompt action WWF reported, assessing environmental effects of six dam projects around the world.

Dams flood valleys, destroy fisheries and endanger species such as the Iberian lynx and jaguars, whose natural valley habitats are submerged

As energy and water crises tighten, we must choose solutions least damaging the environment with the greatest social benefits, said the report.

A \$30 million dam in Belize designed to reduce electricity imports has seen prices rise since its completion. It also flooded 2,500 acres of rain forest.

A project in Iceland will likely flood hundreds of rare pink-footed goose nesting sites and destroy the habitat of Iceland's only reindeer herd.

In Laos, about 5,700 villagers will be resettled by a dam project approved by the World Bank. At least 50,000 people's livelihood will be affected as water is diverted.

"This is not the engineering heyday of the 1950s when dams were seen as the development hallmark. We know dams can cause damage, and must put this knowledge to work", WWF said.

Agroforestry Highlights **Vetiver in Agroforestry: Fruit, Timber, and Mixed Systems,** Craig Elevitch, Agroforestry Net, Inc. P.O. Box 428, Holualoa, Hawaii 96725 USA, cre@agroforestry.net

There are conflicting views as to how best to use vetiver hedges to aid increased production from fruit trees. As a semi-circle around fruit trees, about 3m from each tree on the downhill side, it has been shown to be an effective technique with lychees in Thailand where increased yields exceeding 20% were recorded. However, if the hedge forms a complete circle round the tree it prevents moisture reaching the tree rather than retaining it for use by the tree's roots. This technique provides a windbreak that benefits young tree growth in the early stages.

Using vetiver hedges planted on the contour with the fruit trees also planted on the contour between the hedges is probably the most dependable method. Competition between the vetiver and adjacent fruit trees is minimal because of the vertical nature of the vetiver rooting system, as has been shown in Vietnam. In Trinidad's Maracas Valley it was noted that mango trees benefited from the presence of vetiver hedge barriers due to increase in soil organic matter and moisture. In the Philippines, vetiver was shown to be tolerant

to heavy shade, but the converse is reported elsewhere. In Malaysia, under rubber and oil palm, it was shown that vetiver is tolerant to moderate levels of shade intensity. Vetiver is only tolerant of heavy shade if it has first been established in full sunlight before being shaded out.

In trials in China it has been shown that vetiver planted in citrus orchards increased soil organic matter from 0.4% to 1.8%. Soil bulk density decreased, whilst porosity, organic matter, various trace elements and some 20 amino acids increased. Vetiver hedgerows have also been effectively demonstrated in citrus plantations in Costa Rica. Overall, where vetiver hedges are planted in fruit tree orchards increased yields can be expected due to reduced run-off, the retention of organic material and run-off behind the hedges and protection of tree seedlings against wind.

In the case of timber production it is best to plant the vetiver hedge barriers at the same time or before planting the trees. This allows the vegetative barriers to become well formed and for erosion to be controlled and soil moisture retained to benefit the young tree growth. It is possible that eventually the tree canopy may become so dense that the vetiver will die due to lack of sunlight. However, by then it will have done its work and its initial planting will have been justified through increased timber or fruit production. As a rough 'rule of thumb' it can be said that vetiver will take at least 50% shade after establishment, though this figure is regarded as very conservative by Dr. Julio Alegre, Coordinator at ICRAF in Peru. Over time, silt will build up behind the vetiver hedge and this should be taken into consideration when planting the nearest row of trees above the hedge.

In eucalyptus and teak plantations, for example, where run-off is high, plantation layout could be so designed as to allow unshaded vetiver hedges to be sited at strategic points to break the velocity of rainfall run-off. Essentially, the vetiver hedge will provide an understory that complements the tree production.

Source: Pease, M. 1999. Vegetative erosion barriers in agroforestry. The Overstory #45. Permanent Agriculture Resources, Holualoa, Hawaii. <http://www.overstory.org>.

Complete article and reference list: <http://www.agroforestry.net/overstory/overstory45.html>.

Vetiver Highlights

Vetiver and its Mitigation of the Impact of Storms. Dick Grimshaw, Chairman of The Vetiver Network, dickgrimshaw@vetiver.org

I intended to write about vetiver and its use in pest control, but with the havoc caused by the recent hurricanes and tropical storms along the US Gulf Coast and the less news worthy typhoons that have walloped Vietnam (the worst in 60 years), China and other parts of south east Asia this year, I thought I would once again bring to your attention vetiver's unique ability to substantially reduce the damage to land and structures caused by these extreme events before the disasters fade from short term memory!

Here is a quote from Tran Tan Van of Vietnam "We have just received a letter from Mr. Nguyen Thanh Hien, Chairman of the District, praising the use of Vetiver System. He confirmed that the sea dyke system of the district was heavily damaged, broken at six sections, totaling 1,750 m. Due to water over topping many sections that even though well protected with rock wall on the outside were heavily damaged on the unprotected inner side. Mr. Hien, however, confirmed that those sections with VS planted on the inner face of the dyke remained stable. Mr. Hien has asked for more planting material for the inner face of the dykes".

The damage to the sea dykes in Vietnam sounds uncannily like what we understood happened to some of the levees at New Orleans.

Also from Vietnam we have seen the impact of vetiver for stabilizing embankments and river banks against flood erosion.

Below: flooding river creates no damage to river bank planted with vetiver (left)



Vetiver works well in mitigating the impact of large quantities of moving water because (a) it absorbs the shock and pounding of wave action (b) it significantly reduces the impact of the erosive power of

storm water, and (c) its roots increase the sheer strength of soil and therefore reduce the chance of slippage.

Recently I received from Claudio Zarotti of Italy an interesting interactive model that calculates (using different variables – soil type, slope, climate) the improved sheer strength of soil when protected by vetiver. The Italian version is downloadable from <http://www.vetiver.it/>. An English version can be obtained via email to: info@vetiver.it

An interesting aspect from Vietnam experience is that where vetiver has been planted for more than 3 years on dykes and embankments it has also acted as a pioneer plant that has allowed the introduction of bamboo and other trees and shrubs that were impossible to establish in the absence of vetiver. This confirms similar experience elsewhere in China and Thailand.

Below: Vietnam - Bamboo on left slowly displacing vetiver



I continue to be amazed at what the Vetiver System can do to help mitigate damage by extreme storms, and I continue to be just as much amazed by the fact that many national and local authorities either know nothing

about the technology, or if they do know about it make no effort to use it. Regretfully the latter is often due to inaction by the scientific community. The facts are published (www.vetiver.org); those of you who read this newsletter would help reduce the terrible damage inflicted by extreme weather events if you notified your colleagues and authorities and encouraged them to test and use VS under local conditions. This is particularly important in those areas of the world subject to tropical storms, cyclones, hurricanes and typhoons. We are told that these extreme events will become more frequent and violent – more reason to promote vetiver!

Landcare Highlights

Landcare – to plan or perish, Sue Marriott and Victoria Mack, Secretariat for International Landcare Inc., marriott@silc.com.au, vmack@silc.com.au

The following article is derived from the Scoping Study report (2004)*.

I hadn't fully appreciated that right now the nation is gripped in a feverish massive national planning project – planning natural resource management Australia wide – quite extraordinary when you think about it – border to border – thousands of volunteers being stretched to get it all done by June 30th 2004. It hit me – I am sure the people on the

ground don't quite realize the extent of it all – I doubt if any other country on earth has actually embarked on such an endeavor. Project consultant, Scoping study report: 2004.

In 2005, Australia has achieved an extraordinary level of integrated natural resource and land use planning.

Australia has tended to measure regional natural resource management (NRM) progress within terms of 'products' and 'structures' such as the number of NRM plans accredited and the number of regional organizations established.

The value of these products and structures is largely determined by the strength of partnerships and processes.

The importance of these social elements of regional planning is well recognized in official policies. However we are all still limited in our ability to:

- * Understand what these partnerships and processes mean;
- * Articulate what the expectations are;
- * Identify the steps and timelines relating to partnerships and processes;
- * Provide support to ensure that we are moving in the right direction';
- * Show what has been achieved and demonstrate the value of these achievements.

Regional organizations are struggling with 'engagement'. Government is aware of the need to understand what it means, clarify expectations and develop ways to measure success in this area.

It is the beginning of addressing issues around acknowledging the importance of, and understanding, the social aspects of regional NRM.

The delivery of natural resource management programs has changed in the past few years.

The new approach emphasizes sound integrated NRM planning which also engages people and partnerships. Regional NRM plans focus effort on landscape outcomes with all people taking joint ownership of NRM problems and solutions.

Investigating 'Community group and volunteer engagement in regional NRM' is a complex task. Not only are we dealing with a significant percentage of the Australian population – particularly within regional Australia – but also enormous variation with regard to groups' focus, function, history, dynamics and interests. There is a general sense that volunteer engagement is surprisingly robust. At the individual level, people are continuing to commit their time and effort to local projects and initiatives. Community group engagement is, however, far more variable and the community groups themselves appear to be under increasing pressure in coping with the change, and finding their place within the new NRM Framework.

There is a sense that the more traditional Landcare Groups are changing while other groups involved with industry, environment, marine conservation etc. are pushing ahead.

* Working With People Pty Ltd & Alexander Holm & Associates, (2004), Scoping study report: Case Studies on Community Group and Volunteer Engagement in Natural Resource Management, presented at the Natural Resource Management Community Forum, Adelaide, April 2004 for the Capacity Building Section, Australian Government Natural Resource Management Team, Canberra, ACT

WOCAT Highlights

Hanspeter Liniger, Rima.Mekdaschi Studer and Franziska Jöhr (hanspeter.liniger@cde.unibe.ch)

Vision and Mission (V&M) of WOCAT

After almost one year of existence of WOCAT V&M, participants to the 10th WOCAT Workshop and Steering Meeting (WWSM10) in Belgrade, Serbia and Montenegro (in photo above) agreed on adjusting it to the following:

WOCAT's vision is that local knowledge on sustainable land management is shared and used globally to improve livelihoods and the environment.

WOCAT's mission is to support decision making and innovation in sustainable land management by:

- connecting stakeholders
- enhancing capacity, and
- developing and applying standardized tools for
- documenting, monitoring, evaluating, sharing and using knowledge in soil and water conservation (SWC).

WOCAT mainly addresses SWC specialists, planners and decision makers at the field (farmers, extensionists) and at the planning level.

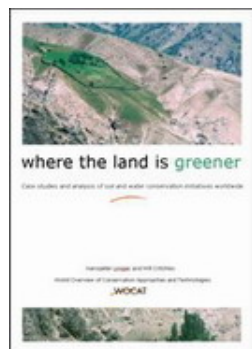
Global Overview book will be soon available

Participants to the WWSM10 have finalized the contents of the Global Overview book and soon the book will be made available globally.

'Where the land is greener' looks at soil and water conservation from a global perspective. This well illustrated and attractive book is the first hard-copy compilation of case studies by the WOCAT team. Over 40 technologies are described – each with photographs, graphics and line drawings – from more than 20 countries around the world.

There are some well-established successes but many little known 'islands of promise' also. Various land use categories are covered – cropland as well as rangeland – and the technologies range from terraces to agroforestry systems, from rangeland rehabilitation to conservation agriculture, from vermiculture to water harvesting. The technologies are supported by matching studies of the 'approaches' that underpinned their development and spread. Some of these are descriptions of projects, but several are fascinating explanations of how spontaneous development

has occurred. The book does not stop with case studies: there are two main analytical sections taking the technologies and



approaches in turn: they search for the common elements of success. Finally there are policy pointers for decision-makers and donors, who are challenged now to invest in making the land greener.

Pre-order price of the book up to February 2006 is €15, plus postage. After that the price will be €25, plus postage. The book will be printed around mid-2006. Contact: WOCAT Secretariat, Centre for Development and Environment (CDE), Steigerhübelstrasse 3, 3008 Berne, Switzerland. wocat@giub.unibe.ch.



WOCAT review by Hans Hurni, hans.hurni@cde.unibe.ch, given at the WWSM10 (from the proceedings, www.wocat.net)



WOCAT is one of the oldest programs in existence - actually after 13 years it cannot be considered a program anymore but an institution.

WOCAT open to progress and elaboration (development). At the ISCO Conference in 1992 in Sydney it was decided to restrict WOCAT's activities to soil degradation and erosion in particular. However, the present methodology is flexible and can cover various land management aspects such as salinization, compaction, etc. Nevertheless WOCAT does not want to claim that it covers everything (vegetation, water) at least up to now. However, new ideas and issues are coming up where WOCAT has to position itself. WOCAT addresses a broad group of old and new stakeholders. Participants of the annual WWSM have the chance to steer the meeting. They originate from big and small countries which gives an impression of imbalance. However, this shows that exchanging ideas and experiences does not depend on the size of a country. Participants range from experienced soil and water conservation specialists to freshly graduated university students.

WOCAT is growing but not financially. WOCAT has rooted itself in the countries and funding occurs mainly on a national basis.

WOCAT's history: In 1992, Hans Hurni as President of WASWC initiated WOCAT to address global problems of soil degradation. SDC provided three years funding. Hans' vision was to produce by 1995 a world map that shows SWC measures that are undertaken all over the world that prevent further land degradation or rehabilitate degraded land. The whole process took longer. WOCAT had to work on the methodology (questionnaires for documenting knowledge, other tools) for many years. Setting up the database also took longer than planned. By now the database includes over 100 case studies. Now the question is: should WOCAT focus on missing best practices in the world now, i.e. collect, document and evaluate further case studies or try to generalize which practices are suitable for which agro-ecological zones.

On a subnational, national and regional level WOCAT is doing very well. However, on a global level donors may show fatigue after 15 years of seeing WOCAT doing the same thing. WOCAT should get a new face. WOCAT should become more confident in addressing crucial global issues like climate change, water, biodiversity, as well as the MDGs (Millennium Development Goals) such as poverty alleviation. WOCAT should defend (and be proud) that it is possible to address these issues through farming communities. WOCAT is in focus with combating poverty but until now the indicators for showing this potential and gain have not yet been clearly demonstrated. The World Bank launched a study on how much agricultural science and technology can affect productivity and hence alleviate poverty. Take the example of C sequestration. The improvement of soil organic matter is a simple indicator of production enhancement (trees will recycle, soil carbon can in many places be increased and thus carbon sequestered). Or take the example of water management: overland flow is dangerous; water will be lost and will cause erosion. Groundwater flow (infiltration) into the watershed is

important. Our data and indicators can help to estimate this. Additionally we also need to better quantify benefits of SWC practices in terms of "crucial global issues", i.e. more research into (quantified) effects of various SWC practices on C sequestration, water/ moisture, biodiversity, etc.

In conclusion WOCAT should continue, but the database should not be our end product but the means to address global issues. Use WOCAT in other activities and imbed it in other programs.

RESEARCH NEWS & ABSTRACTS

Agriculture consumes and produces water: Farmers and soils determine green and blue water flows – the case of the Save basin in Zimbabwe. Sjeff Kauffman, ISRIC – World Soil Information, Wageningen, The Netherlands, sjef.kauffman@wur.nl, www.isric.org

Context: In semi-arid and sub-humid regions in Sub-Saharan Africa (SSA), rain fed agriculture uses only 15 to 30% of the rainwater for crop production. High losses are due to runoff, low infiltration during high-intensity rains, poor crop rooting conditions, soil erosion, evaporation losses from soil and canopy, in particular during pre-planting and early crop stages. The seasonal dynamics of *green*¹ and *blue*² water flows in rain fed agriculture are insufficiently known for specific soil and climatic regions. Quantitative spatial information is lacking on runoff, evaporation, deep percolation and groundwater recharge, both under current and improved soil management. What is the scope, in quantitative terms, to reduce runoff and to increase green water when optimizing *green water management*³ under specific soil and climatic conditions?

Objectives: To analyze Green and blue water dynamics of the Save basin in Zimbabwe by modeling water balances for local soil and climate conditions and maize, the dominant cereal crop in Zimbabwe.

Method: Three databases were used to analyze green and blue water flows under various soil management scenarios (soils, climate and soil and water conservation technologies). The three scenarios for effective rain water infiltration are: 0%, 20% and 40% runoff. Maize yields and components of the water balance were calculated using a simulation model.

Results: Results for various water infiltration scenarios were presented on green and blue water maps and analyzed for their effects on crop yield and simulated flows of water: green water (crop transpiration), lost water (soil evaporation) and blue water (groundwater recharge). These maps can be consulted at www.isric.org

Main conclusions: Conclusions for two agro-climatic zones of the Save basin:

* Dry hot lowlands

Soil evaporation may account for up to 50% of the total water balance. Unproductive runoff may decrease from 100 mm to zero, green water increased from 20 to 100 mm, while groundwater recharge increased from zero to 75 mm, amounting to 750 m³ ha yr⁻¹.

* Moist warm-temperate highlands

Runoff may decrease from 300 mm to zero, green water increased from 175 mm to 350 mm, with a projected maize yield increase of up to 60%, while groundwater recharge increased from 50 to 320 mm, which translates to 2,700 m³ ha⁻¹ yr⁻¹.

General conclusions

* Soil properties and farmers' soil management practices are decisive in the partitioning of precipitation into green water and blue water flows.

* Green water management improves (i) rain water use efficiency, hence yield potential, and (ii) at the same time improves blue water resources, by reducing run-off, thereby causing less flash floods, erosion and water turbidity, and increased groundwater recharge and more stable river base flow.

* Worldwide, agriculture is seen as the largest water consumer. However, the role of farmers in rainfed agriculture as contributors to water resources should be recognized. Farmers need to be rewarded to permit investment in improved soil and water management practices.

¹ Green water is rain water held in the soil and available to plants for transpiration. Water held in the soil that evaporates at the soil surface is recognized separately, as it can be influenced by soil management.

² Blue water is water, which can be collected, pumped and transported; it includes run-off, groundwater, and river and lake water.

³ Green water management includes all techniques and approaches to reduce runoff, increase water infiltration and reduce soil evaporation.

ABSTRACT: Farmers' indicators for soil erosion mapping and crop yield estimation in central highlands of Kenya. **PhD thesis by Barrack O. Okoba**, okoba2000@yahoo.com, Tropical Resource Management Paper No. 62, Erosion and Soil & Water Conservation Group. Dept of Environmental Sciences, Wageningen Univ. and Research Centre, Wageningen, Netherlands. 2005. 143 pp. ISBN: 90-6754-881-2, ISSN: 0926-9495, <http://www.dow.wau.nl/eswc/> Contact: Jolanda Hendriks, jolanda.hendriks@wur.nl

The central highlands of Kenya are characterized by abundant rainfall and fertile volcanic soils that support agricultural activities, but problems of soil erosion are widespread in the region. Past efforts to control soil erosion problems were through application of regulations that enforced adoption of soil and water conservation measures. Despite many decades of campaigns to have farmers embrace the recommended conservation measures, success was low and soil degradation continued to increase.

Various methodological gaps were identified in the currently applied Catchment Approach concept for soil and water conservation planning. Among these was the lack of simple infield tools to assess soil erosion prior to recommending conservation measures. Currently assessment of soil erosion is largely dependent on expert experiences and conventional approaches that are resource demanding and hardly simulate local conditions. The aim of this study was to develop a tool for participatory soil erosion mapping at field and catchment scales. This tool is based on the farmers' knowledge and perceptions of soil degradation and uses farmers' indicators for soil erosion and sedimentation. Research was conducted in a representative area of the humid highlands of central Kenya in Gikuuri catchment in Embu District.

Through household interviews and focused group meetings the study established that farmers were aware of the on-going soil erosion problems and they knew various conservation measures despite low adoption rates. Through their wide-scale knowledge of the erosion indicators, they were able to present soil erosion scenario maps comparable to scientific assessments. Crop yield losses were closely correlated to soil erosion indicators as well as to soil erosion status. By reflecting on the catchment soil erosion status map, the farming community resolved to undertake planning of soil and water conservation measures at both the field and catchment level because they were able to easily pinpoint fields or hillslopes that were severely eroded. The study concluded that lack of involving farmers greatly reduced their motivation to participate in soil and water conservation activities and that using their knowledge of topsoil profile characteristics led to simple approaches for quantifying soil productivity. The last part of this study presents a tool that could be applied to engage farmers to map the extent of soil erosion and through which participatory soil and water conservation planning could be realized within the framework of the current Catchment Approach, widely adopted in the East African highland regions.

ABSTRACT: Participatory appraisal for farm-level soil and water conservation planning in West Usambara highlands, Tanzania. **PhD thesis by Aibino John Mkavidanda Tenge**, atenge@hotmail.com, Tropical Resource Management Paper No. 63, Erosion and Soil & Water Conservation Group. Dept of Environmental Sciences, Wageningen Univ. and Research Centre, Wageningen, Netherlands. 2005. 163 pp. ISBN: 90-6754-904-5, ISSN: 0926-9495, <http://www.dow.wau.nl/eswc/> Contact: Jolanda Hendriks, jolanda.hendriks@wur.nl

Soil and water conservation (SWC) measures are needed to control soil erosion and sustain agricultural production on steep slopes in the West Usambara Mountains and are promoted by both governmental and non-governmental programs. However, there is limited information on their physical effectiveness and financial efficiency. Farmers' preferences and socio-economic factors have not been adequately considered. As a result, the adoption of recommended SWC measures is minimal and soil erosion continues to be a problem. Research determined the social and economic factors that influence adoption of SWC measures assessed the physical effectiveness of bench terraces, grass strips and *fanya juu*, being the major SWC measures used, and assessed the costs and benefits of these measures. Household surveys, group discussions and transect walks were methods used. Gerlach troughs and runoff plots were used to assess the physical effectiveness of the conservation measures. A simple tool for Financial Cost Benefit Analysis (FCBA) was developed to assess the financial efficiency of SWC measures, under different soil and slope conditions and for different groups of farmers. Involvement in off-farm activities, insecure land tenure, location of fields and a lack of short-term benefits are factors that negatively influence adoption. Membership of farmer groups, level of education and contacts with extension agents and SWC-programs influence the adoption of SWC measures positively. *Fanya juu* is the most effective measure in reducing soil and water losses, followed by bench terraces and grass strips.

However, bench terraces retained more soil moisture and increased maize and bean yields more than *fanya juu* and grass strips. Labor is the major cost item in implementing SWC measures and it is higher for bench terraces than for *fanya juu* and grass strips. Costs of SWC measures exceed the returns in the first two years. However, over a period of 15 years the net present value is up to US\$608 ha⁻¹ for bench terraces, US\$309 ha⁻¹ for *fanya juu* and US\$184 ha⁻¹ for grass strips. To facilitate adoption of SWC measures a participatory approach to SWC planning at catchment level is recommended.

ABSTRACT: Modelling spatial patterns of erosion in the West Usambara Mountains of Tanzania. **PhD thesis by Olga Vigiak**, Tropical Resource Management Paper No. 64, Erosion and Soil & Water Conservation Group. Dept of Environmental Sciences, Wageningen Univ. and Research Centre, Wageningen, Netherlands. 2005. 176 pp. ISBN: 90-6754-908-8, ISSN: 0926-9495, www.dow.wau.nl/eswc/ Contact: Jolanda Hendriks, jolanda.hendriks@wur.nl

Soil and Water Conservation (SWC) planning would benefit from location of sources of sediment in a catchment. Distributed erosion models are valuable tools to achieve this, but the quality of spatially distributed predictions is hampered by the complexity and heterogeneity of natural landscapes, coupled with limited spatio-temporal data sets of sufficient accuracy. This study aimed at developing a semi-empirical, spatially distributed erosion model to locate sources of sediment within a catchment in data scarce environments. In the experimental catchment of Kwalei (West Usambara Mountains, Tanzania), the spatial distribution of erosion and its factors were observed during two rainy seasons. Overland flow was dynamic Hortonian: triggered by short and intense showers, it quickly re-infiltrated as it moved downward. These observations were used to build a hydrologic model to predict event overland flow depth that was based on rainfall characteristics, land use, field topology, and the average travel distance of overland flow. The hydrologic model was coupled with the sediment phase of the Morgan, Morgan and Finney model to estimate field erosion rates. Model simulations predicted around 75% of erosion pattern, but the

uncertainty of model prediction due to sediment transport parameterization was high. Analysis of the spatial patterns of erosion and its driving factors showed that in the catchment severely eroded areas were correlated to crust and vegetation cover, but the spatial extent of erosion depended on the overland flow travel distance. The spatial scale of some farmers' indicators of erosion, i.e. signs that farmers use to assess erosion in the fields, was close to that of eroded areas and overland flow. Farmers' indicators of erosion were used to predict the distribution of erosion. The Farmers' Indicator Tree was the best among several models in predicting the spatial pattern of erosion. Therefore, the integration of farmers' knowledge could improve distributed modeling of hydrology and erosion.

ABSTRACT: Activity Diversification in Rural Livelihoods: The Role of Farm Supplementary Income in Burkina Faso, **PhD thesis by Johan E. Brons**, Tropical Resource Management Paper No. 66, Development Economics Group. Dept of Social Sciences, Wageningen Univ. and Research Centre, Wageningen, Netherlands. 2005. 153 pp. ISBN: 90-6754-941-x, ISSN: 0926-9495. www.socialsciences.wur.nl/dec/

The present study assesses the contribution of farm supplementary activities to rural livelihoods in low-income regions that are characterized by economic stagnation. Through analyzing the complete household portfolio of economic activities the study identifies specific aspects of individual and household livelihood diversification. The survey was carried out in villages that are different with

respect to endowments of agricultural resources and access to infrastructure. Local non-farm sectors, characterized by excess capacity, provided insufficient technological and institutional development for structurally improving the economic base in the villages. Personal status within the household, i.e. authority and gender, was a major determinant for access to farm supplementary activities. Individual characteristics, related to ability, preference, and property, appeared to be less important as determinants for actual involvement in these activities. Individual livelihoods were more specialized than commonly assumed. Attitudes towards risk had a limited impact on daily livelihoods; people who were less risk-averse selected a more diversified income portfolio. Only in the resource-poor villages, more supplementary revenues led to more efficient cereal production.

The use of external inputs for crop production did not differ across farm households with different supplementary revenues. A breakdown of household income along the village income spectrum shows that availability of agricultural resources had a major impact on income level and incidence of poverty. Involvement in supplementary activities, however, had a limited effect on the income distributions within the villages. The general conclusion points to the need to emphasize that livelihood diversification, besides its functionality for mitigating income risks, is also a structural result of poverty. Therefore, income diversification itself is an insufficient device to structurally alleviate poverty, and additional attention should be given to the institutions and technologies of the different livelihood components.

ANNOUNCEMENTS

FUNDS

Small Funds to Help Restore Tsunami-Hit Areas

There is a small grants fund in India, Sri Lanka and Indonesia to support projects that promote the restoration of coastal ecosystems and ecological sustainable reconstruction efforts after the Tsunami disaster. Please contact the small grants officer in your own country (see below) for further details.

Announced by Ms Rietje Grit, Small grants unit manager IUCN NL, Phone: +31 20 626 1732 (direct: + 31 20 344 9687), Fax: + 31 20 627 9349, www.iucn.nl

Thailand/Malaysia: Rajagopal Singh, Wetlands International South Asia, Phone: +91-11-24338906/ +91-11-24338906, wisaind@del2.vsnl.net.in

Sri Lanka: Kumi Ekaratne, IUCN Sri Lanka, Phone: +94 11 2682418/ +94 11 2682470, kum@iucnsl.org

Indonesia: Muhammad Ilman, Wetlands International Indonesia, Phone: +62 251 312189/ + 62 251 325755, wamm@wetlands.or.id

WIPO Fund for Indigenous and Local Community Participation

The General Assembly of the World Intellectual Property Organization (WIPO) has agreed to establish a Voluntary Fund for Indigenous and Local Communities. This Fund will directly support the participation of representatives of these communities in the work of the Intergovernmental Committee on Intellectual Property and Genetic Resources,

Traditional Knowledge and Folklore (IGC). Beneficiaries from the fund will be members of indigenous or local communities, or other representatives of customary holders or custodians of traditional knowledge or traditional cultural expressions. See more details in http://www.wipo.int/edocs/prdocs/en/2005/wipo_pr_2005_422.html.

TRAINING

A Workshop in Ecuador

In 2006, besides AgroEnviron2006 (September 5-7, 2006), I also will be co-organizing a workshop (accent on work) in Ecuador on 'Conservation Tillage' for local farmers and their family members of two small communities. Demonstrations will be given in the field and also some illustrative seminars. The course is supported in part by a UNESCO Trust fund (sponsored by the Flemish Government of Belgium). It is the intention to organize the course every year in other Andes countries of South America. In 2007 Venezuela is a candidate and we are looking for organizations in Colombia, Peru and Bolivia to do similarly.

For more information: Donald Gabriels, University of Ghent, Ghent, Belgium. donald.gabriels@ugent.be

45th Int'l Course on Land Drainage, Alterra, Wageningen, The Netherlands, April 3-July 23, 2006.

The International Course on Land Drainage (ICLD) consists of 4 modules that can be also followed as a stand-alone module for participants that are only interested in a specific aspect of drainage or its role in Integrated Water Resources

Management. Next, the course methodology is more focused on the specific problems and solutions in the participant's home country, the so-called "problem-solving oriented" education approach. More information can be found on our new website: www.ilri-courses.nl.

This year (2005) we have 8 participants with a Tsunami-fellowship from Sri Lanka, India, Indonesia and Thailand and we hope to welcome more participants from the region in 2006, when the courses will be organized from April 3 to June 23. Contact: Henk Ritzema, Alterra-ILRI, P.O. Box 47, 6700 AA Wageningen, The Netherlands. Phone: +31 317 495 583 (direct), Fax: +31 317 495 590, www.ilri.nl henk.ritzema@wur.nl

MEETINGS

14th Fertilizer Congress, Fertilizers and Fertilization – Stewardship for Food Security, Food Quality, Environment and Nature Conservation

Lotus Hotel Pang Suan Kaew, Chiang Mai, THAILAND January 22-27, 2006

Organized by: Land Development Department (LDD), Department of Agriculture (DOA), Department of Agriculture Extension (DOAE), Kasetsart University (KU), Soil and Water Conservation Society of Thailand (SWCST), Soil and Fertilizer Society of Thailand (SFST) and The International Scientific Centre for Fertilizers (CIEC)

Contact: Pitayakon Limtong, Phone: 66 2941 2724, Fax: 66 2579 7687, pitaya@ldd.go.th, www.ldd.go.th/wfc14th

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Conference-Workshop on "Facilitating Adoption of No-tillage and Conservation Farming Practices",

Tamworth, Australia 29-30 March 2006

Supported by: Australian Centre for International Research (ACIAR), Grains Research and Development Corporation (GRDC), NSW Department of Primary Industries, and University of New England

A series of farmer focus group meetings, sponsored by the Australian Centre for International Agricultural Research (ACIAR), was conducted in north-western NSW in early 2005. These meetings have confirmed the importance of economic and social as well as technical and managerial constraints that are preventing more farmers adopting conservation farming and no-tillage practices. Reasons given by farmers for non-adoption are largely consistent with the twelve categories:

- . • Too complex;
- . • Not easily divisible into manageable parts;
- . • Not compatible with farm and personal objectives;
- . • Not flexible enough;
- . • Not profitable;
- . • Capital outlay is too high;
- . • Too much additional learning is involved;
- . • Risk and uncertainty is too great;
- . • There is conflicting information;
- . • Lack of appreciation of the problem;
- . • Lack of physical infrastructure;
- . • Lack of social infrastructure.

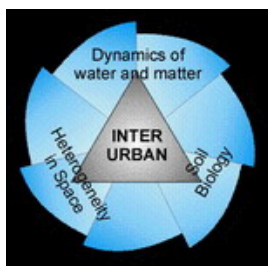
The information obtained from the focus groups together with farmer case studies will set the scene for discussion and workshopping of potential solutions to these problems. It is expected that the recommendations and strategies arising from the conference-workshop will be of special interest to Rural R&D Corporations, Catchment Management Authorities, Government Agencies, Agribusiness and farmers. Papers that address the following issues in relation to adoption of no-tillage and conservation farming practices will be considered: – Understanding social diversity and social drivers in farming communities, – Social, economic and legal interactions affecting farm management, – Effects of farm family lifecycle, family composition, succession issues, – Structural issues - size of farm, income, – Motivators for environmental management or stewardship, – Participatory involvement of farmers in the R, D&E process, – Regional or individual case studies of successful adoption, ? Documentation of the natural resource benefits of conservation farming, – Role of agribusiness and other 'key influence' agents, – Overcoming specific agronomic or mechanical constraints

Registration fee: A\$200. Contact Bob Martin at bob.martin@dpi.nsw.gov.au and tamworth.office@dpi.nsw.gov.au.

Interurban II: "Water and Organic Matter in Anthropogenic Soils: Dynamics and Processes"

Berlin, Germany March 29-31, 2006

The meeting will be a forum for soil scientists, geophysicists, soil biologists, microbiologists, and environmental chemists. Main topics of the meeting are the interrelation between soil moisture dynamics, topsoil characteristics, and soil biology. We



focus on the integration of new techniques into soil science with special emphasis on the interaction between different disciplines. Two workshops provide time for intensive discussions of special themes. Keynote speakers will introduce the topics.

Workshop 1: Temporal dynamics and spatial heterogeneity of unsaturated water flow: geophysical/soil physical approaches and numerical simulations, *Workshop 2:* Linking moisture distribution, organic matter properties and biological activity in heterogeneous soils.

Contact: Forschungsschwerpunkt "Wasser in Ballungsrumen", Technische Universität Berlin, Sekr KF 4 Strasse des 17. Juni 135 10623 Berlin, Germany. Phone: +49 (0)30 314-25493, Fax: +49 (0)30 314-23313, water-centre@tu-berlin.de, www.interurban.de

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Wildfire effects on soil organic carbon dynamics, soil degradation and soil redistribution Special session (SSS22) of the European Geoscience Union, General Assembly 2006

Vienna, Austria April 2-7, 2006

Several hundred million hectares of forest and other vegetation types are estimated to burn annually throughout the world. A further increase in the area burnt, and in some cases also in fire severity, is expected as a consequence of climate and land use changes. Some of the impacts of wildfires and associated post-fire processes on the soil system, including increased soil erodibility or nutrient losses have been key research topics for some time, while others, such as changes to the nature and amount of soil carbon, and soil mineral and organic matter redistribution patterns have seen comparatively little attention. These impacts are, however, frequently interlinked and progress in the understanding of one often translates into advances in another.

Recent catastrophic fires in Europe, Australia, North America and elsewhere have once again highlighted the need to improve and adapt our capability in predicting and addressing their on-site and off-site effects. This will only be achieved through progress in understanding the short- and long-term effects of fires in environments increasingly affected by changes in climate, vegetation cover and land management, in turn presenting us with unprecedented fire behavior and post-fire conditions.

This session aims to facilitate exchange and accelerate progress in these fields by providing a major opportunity for cross-disciplinary exchange between researchers with a wide range of backgrounds but a common interest in fire effects on the soil system. Presentations are welcome on all fire-related studies that focus on soil organic carbon dynamics, soil degradation and soil redistribution.

Conveners: Stefan Doerr, Artemi Cerdà and Pete Robichaud. Deadline abstract submission (January 13th 2006)

Contact: Artemi Cerdà at acerda@uv.es and more information at http://www.cosis.net/members/meetings/sessions/information.php?p_id=180&s_id=3160

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17th Global Warming International Conference and Expo (GW17)

Miami, Florida, USA April 19-21, 2006

Themes:

Global warming and the oceans
Agricultural and forestry resources management
Education: global change & sustainable development
Remote sensing and global surveillance
GIS
Clean energy technology
Low ghg transportation
Sustainable environment and health for the 21st century
Water resources management
Carbon & ghg management
Extreme events and impacts assessment
NAO and El Niño
Greenhouse gas & ecosystems
Ecology and biodiversity
Human health in a changing climate

Registration fee: \$325.00 (students \$190.00)

Contact: GWXVII Secretariat, P.O. Box 50303, Palo Alto CA 94303, USA. Fax: 1-630-910-1561, gw17@globalwarming.net, <http://globalwarming.net/>

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International Conference on Water Resources, Hydraulics & Hydrology 2006

Evia Island, Greece May 8-10, 2006

Organized by: World Scientific and Engineering Academy and Society, www.wseas.org

Contact: P. Stavrou, WSEAS, Agiou Ioannou Theologou 17-23, 15773, Zografou, Athens, GREECE. www.wseas.org, www.wseas.org/conferences/2006/evia-island/whh

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BALWOIS 2006: An International Scientific Conference

Ohrid, Fyr Macedonia May 23-26, 2006.

BALWOIS is a meeting that will further the progress of knowledge in the fields of Scientific Research, Education, Policy and Development Activities and on all the Water related issues related to climate changes, hazard mitigation and water resources assessment, management and protection.

The main topics of BALWOIS 2006 are:

- Climate and Environment
- Hydrological regimes and water balances
- Droughts and Floods
- Integrated Water Resources Management
- Water bodies protection and Ecohydrology
- Lakes
- Hydrological modeling
- Information systems for decision support

Instructions and all information will be available on www.balwois.net.

Note: No registration fees will be charged for participants coming from Balkan non-EU member countries and some financial support will be available to assist them. The BALWOIS 2004, with more than 300 participants, was a great success, with 249 papers available on www.balwois.net. Contact: Marc Morell, BALWOIS Coordinator, secretariat@balwois.net

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2nd International Symposium "Preventing and Fighting Hydrological Disasters"

Timișoara – Romania 29 June – 1 July 2006

Organized by "Politehnica" University of Timișoara, Romanian Water Authority, Romanian National Committee, Hydrotechnical Faculty IHP-UNESCO, under the auspices of WASWC

Themes:

- Natural and Accidental Floods
- Hydrological Droughts
- Pollution of Water Resources
- Policies and Strategies

Important dates

- 15 February, 2006 Pre-registration and abstracts
- 15 March, 2006 Notification of acceptance
- 30 April, 2006 Full text

Language: English

Symposium location: "Politehnica" University of Timișoara, Faculty of Hydrotechnics, Enescu St., no. 1A, 300022 Timișoara, Romania. Chairman: Prof. dr. ing. Gheorghe Cretu, Phone: +40 256 404096, Fax: +40 256 404106, gcr@mail.dnttm.ro

Contact person: As. Flaminia Mocanu, Phone: +40 256 404105, Fax: +40 256 404106, flaminiamro@yahoo.com

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The 18th World Congress of Soil Science (WCSS)

Philadelphia, Pennsylvania, USA July 9-15, 2006

Please visit <http://www.colostate.edu/programs/IUSS/18wcscs/index.html> for updated information.

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III Iberoamerican Congress on Erosion and Sediment Control
“Towards a Sustainable Environmental Management”,
 Buenos Aires, Argentina August 9-11, 2006.

Organized in cooperation with the International Erosion Control Association (IECA), Contact info@fundacion-inmac.org, or Eduardo Rienzi, our NR for Argentina at rienzi@agro.uba.ar

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XXIII Conference of the Danubian Countries on Hydrological Forecasting and Hydrological Bases of Water Management

Belgrade, Serbia and Montenegro August, 28-31, 2006

Contact: Tioslav Petkovic, Republic Hydrometeorological Service of Serbia, Kneza Viseslava 66, P.O. Box 37, 11030 BEOGRAD, Serbia and Montenegro. Phone: +381 11 3537 961/ 3537 834, Fax: +381 11 3537 821, danubeconference@hidmet.sr.gov.yu

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AGROENVIRON-2006 – International Symposium
Agriculture Constraints within the Soil-Plant-Atmosphere Continuum
 Ghent University, Ghent, Belgium September 4-7, 2006

Last Date for Abstract Submission: Jan 1, 2006.

Participants are invited to share their knowledge and experiences in discussions on the issues related to agricultural constraints within the soil-plant atmosphere continuum, within the framework of the following special topics.

- * Role of Conservation Agriculture for sustainable farming
- * Contamination of the soil-water-atmosphere continuum in agricultural areas
- * Waste treatment for agricultural soil amendment
- * Desertification and land degradation in agricultural ecosystems

Contact: Agroenviron-2006 Symposium Secretariat, Ghent University, Faculty of Bioscience Engineering, Department of Soil Management & Soil Care, Coupure Links 653, B-9000 Ghent, Belgium. Ph: +32092646038 Fax: +32092646247 joke.vandesteene@ugent.be, donald.gabriels@ugent.be, <http://users.ugent.be/~jvdestee/agroenviron/index.html> or Dr. Sajid Mahmood (Azeemi), International Coordinator, Centre of Excellence in Water Resources Engineering, Lahore, Pakistan, drsajid_pk@yahoo.com

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2nd International Symposium on Soil Erosion and Dry-land Farming (SEDF'06)
 Yangling, Shaanxi, China September 26-30, 2006

Organized by: CAS-MWR-Institute of Soil and Water Conservation, USDA-National Soil Erosion Research Laboratory, USDA-National Sedimentation Laboratory, World Association of Soil and Water Conservation and Northwest Science & Technology University of Agriculture and Forestry

Themes:

- * Soil erosion processes, assessment, and control
- * Mechanism and techniques of ecological rehabilitation
- * Sustainable soil and water resource management in semi-arid areas.
- * Improved water use efficiency in dry-land farming systems.
- * Impacts of global climate change on soil erosion and dry-land farming
- * New technologies in soil conservation and dry-land agriculture.

Important Dates: January 01, 2006: Interest reply and Abstract due
 February 01, 2006: Preliminary program
 May 20, 2006: Conference registration due
 August 30, 2006: Final program and proceedings paper due

Participants of the SEDF06 are requested to register before May 20, 2006. The registration fee is US\$240 (student: US\$140). This will cover the cost of scientific activities, abstract volume, transportation between Xi'an Xianyang Airport and Yangling, and social events (reception and banquet). The cost of post-conference tours is not included in the registration fee. Post conference tours are to be organized, with an additional fee.

Contact: SEDF'06 Secretariat, No.26 Xinong Road, Yangling, Shaanxi 712100, People's Republic of China. Phone: +86-29-87012872?87012871, Fax: 86-29-87012872?87012210, keyanban@ms.iswc.ac.cn, <http://www.iswc.ac.cn>

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1st INTERNATIONAL INDIAN GEOGRAPHY CONGRESS “ENVIRONMENT, DEVELOPMENT AND GEOINFORMATICS”

Hyderabad, India September 28-30, 2006

Organized by: Department of Geography, Osmania University, Hyderabad, India, under the auspices of the National Association of Geographers India (NAGI)

Convened by Prof. S. Simhadri (profsimhadri_s@yahoo.co.in) and Prof. Kalpana Markandey (hyd1_kalpanam@sancharnet.in)

Contact: Dr. R.B. Singh, NAGI Secretary General, Department of Geography, Delhi School of Economics, University of Delhi, Delhi, 110007, India. Phone: 91-011-27666783(o), 91-011- 27553850(h), rbsgeo@hotmail.com

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SUMMARY REPORTS

International Ecoagriculture Conference and Practitioners' Fair, September 27 to October 1, 2004 at the World Agroforestry Centre in Nairobi, Kenya.



Conference Hall Discussion Group

The purpose of the Conference was to assess the state of ecoagriculture systems and practices, and to develop a strategy to promote and support ecoagricultural development around the world.

“Ecoagriculture” is a term coined in the year 2000 to convey a vision of rural communities managing their resources to jointly achieve three broad goals at a landscape scale: enhancing rural livelihoods; protecting or enhancing biodiversity and ecosystem services; and developing more sustainable and productive agricultural systems (crops, livestock, forests, fish). Meeting the goals of ecoagriculture at a landscape scale often requires collaboration between diverse stakeholders who are responsible for managing or making decisions that impact upon agricultural landscapes. The International Ecoagriculture Conference aimed to provide an opportunity to convene a group of leading ecoagriculture innovators, representing many different stakeholder groups and schools of thought with diverse roles and impacts on landscapes, production and rural livelihoods.

The Conference had five main objectives: to encourage knowledge-sharing among participants; to advance understanding of ecoagriculture principles and strategies for improving ecoagriculture systems; to enable participants to identify and pursue actions and collaborative partnerships to benefit their own work; to provide the foundation for a Strategic Action Plan for Ecoagriculture Partners; and to agree upon a ‘Nairobi Declaration on Ecoagriculture’ for communicating with policymakers and the public. Participants reviewed diverse examples of ecoagriculture and developed specific recommendations on action to promote more widespread implementation.

The central activity of the Conference was group discussions centered upon four key themes: Understanding Ecoagriculture, Managing Ecoagriculture, Valuing Ecoagriculture and Mobilizing Community Ecoagriculture. A number of activities fed into and substantiated these theme discussions, particularly commissioned papers, case study presentations, ecoagriculture field trips, posters and an Ecoagriculture Resource Centre. Throughout the Conference, a Community Shamba dialogue space played an integral role in facilitating the broad engagement of grassroots practitioners in the conference program, maximizing opportunities for knowledge exchange amongst field practitioners.

Key recommendations included to:

- * Undertake objective and rigorous analysis of case studies to build a convincing scientifically credible foundation for ecoagriculture;
- * Strengthen access to and dissemination of existing knowledge, particularly at a local level;
- * Review existing tools for implementing and evaluating ecoagriculture outcomes at a landscape scale, and explore ways to integrate tools that employ different approaches at different spatial and temporal scales;
- * Facilitate the engagement of the entire food chain in developing and achieving transparent, market-driven incentives for adopting ecoagriculture approaches;
- * Strengthen mechanisms to institutionalize ecoagriculture-friendly policy and program development with the active participation of local communities and other stakeholders; and
- * Enhance local communities’ knowledge, skills and awareness by investing in effective learning processes and support for adapting and/or upscaling locally driven ecoagriculture initiatives. Areas of particular debate included the feasibility of coordinating multiple management strategies at a landscape scale, the use of agrochemical inputs and /or genetically modified organisms (GMOs), and the sustainability of markets for ecoagriculture products.

The Nairobi Declaration on Ecoagriculture approved as a consensus document on Friday 1st October, concludes: “We believe that mobilizing a movement of diverse stakeholders inspired and committed to ecoagriculture, and the improvement of rural livelihoods together with preservation and restoration of ecosystem services, will build synergies and achieve globally significant benefits for food security, human health and nutrition, poverty alleviation and environmental sustainability”.

For further information on the International Ecoagriculture Conference, including the Nairobi Declaration on Ecoagriculture, electronic copies of the Conference report and materials presented during the Conference, please visit

the Ecoagriculture Partners website:
www.ecoagriculturepartners.org.
 – Sara Scherr, President, Ecoagriculture Partners,
sscherr@forest-trends.org

High Level Meeting on Sustainable Development of Soil and Water Conservation in China, Nanchang, Jiangxi, China, November 4-7, 2004



Conference Hall at a hotel in Nanchang, Jiangxi Province

About 37% of China suffers from soil erosion with an annual soil loss amounting to 5 billion tons. About 90% of the poor in China live in areas with severe problems of soil erosion by water. A high level meeting on sustainable development of soil and water was organized by Global Water Partnership, China, WASWC and the China Society for Soil and Water Conservation and was hosted by Jiangxi Provincial Department of Water Resources. The policies and mechanism of soil and water conservation, eco-environment, poverty reduction, etc were discussed at the meeting.

The Soil and Water Conservation Law of the Peoples' Republic of China enacted in 1911 resulted in great achievements in managing soil and water. However, the situation of soil and water loss in China is still serious with the speed of amelioration being slower than the speed of desertification. It was thought that it should be mandatory for every individual and organization to protect soil and water resources from degradation. This could be achieved through setting up a Supervision General Station of Ecosystem Consortium for supervising the areas with severe soil erosion, development projects and collecting information about soil erosion and conservation. The masses at village level need to be made aware of the problem and the organizations to be established to deal strictly with breaches of the law and to consolidate the achievements of soil and water conservation. It was agreed that the current Soil and Water Conservation Law needed to be revised, keeping in mind the new ideas and concepts developed during the last decade.

It was felt that soil and water conservation had improved through the following funds and investments: the water resources construction fund, the agriculture fund, the national debt fund, the small-scale farmland water resources fee, the subsidy for returning farmland to forestry and grassland, the protection forest construction fee, wind protection, sand consolidation and water source protection fees. A long-term reimbursement fund for soil and water conservation should be established. Both short and long term interests of the farmers have to be considered. The subsidy of providing food grains for returning farmland to forestry needs to be continued, in addition to ensuring safe drinking water supplies, constructing methane gas and small hydropower projects to replace firewood by electricity.

To achieve the goal of sustainable development, Agenda 21 of the Rio de Janeiro Conference evaluation of ecosystems should be a part of the national economic development indices.

It was also felt that site-specific soil and water conservation measures need to be developed and adopted. It is not appropriate to put forward impractical slogans or promote similar soil and water conservation technologies without considering the different precipitation levels, soil and other conditions. Indigenous technologies need to be refined and adopted. Both fundamental and special technical research needs to be modified, especially on whole basin ecosystems.

The committee felt that a national and local coordinated mechanism of soil and water conservation was needed to facilitate cooperation and joint participation. There should be integrated management of soil and water conservation, natural forestry protection, protection forestry planting, returning farmland to forestry and grassland and urban ecosystem protection, which are managed by different sectors. It was suggested that public involvement should be sought, international collaboration developed and more use made of civil societies and NGOs.

- Björn Guterstam, Global Water Partnership (GWP), Stockholm, Sweden. bjorn.guterstam@gwpforum.org

Report on International Symposium on Participatory Strategy for Soil and Water Conservation, November 27-28, 2004 at Tokyo University of Agriculture, Japan.

The symposium was organized by the Institute of Environment Rehabilitation and Conservation (ERECON) and co-organized by the United Nations University (UNU), the World Association of Soil and Water Conservation (WASWC), the Japan International Cooperation Agency (JICA) and the Japanese Society of Irrigation, Drainage and Reclamation Engineering (JSIDRE). 90 participants attended from 15 countries, and 47 papers were presented. The papers and discussion focused on issues of technology transfer, participatory strategies and benefits to farmers of soil and water conservation. The majority of presenters belonged to universities or governmental organizations, but there were also five from NGOs.



Participants to the symposium

The following key points emerged:

- (1) Technology should be developed with a sound scientific base and harmonized with the natural and social environments.
- (2) Technology development should be jointly planned and implemented by farmers and rural beneficiaries with outside

support, to assure the appropriateness and sustainability of the technologies.

(3) The comprehension by potential beneficiaries of soil and water conservation problems is the essential condition and starting point for the development of successful strategies.

(4) Technology development through participation should not be focused only on the technology, but also seek to support and foster the independence of local people.

(5) Active, empowered participation means that local beneficiaries identify the problem, together with scientists and change agents, take part in technology choices and in evaluating the technologies.

The symposium concluded with a ceremony in which the Scientific and Technical Awards for the Year 2004 of the World Association of Soil and Water Conservation, Japan, were announced and presented. Prof. Tetuaki Nagasawa (Hokkaido University, Japan) was awarded the Scientific Award for his work entitled, "A Series of Studies on Conservation of Sloping Farmland under Cold and Arid Conditions." The Overseas Activities Department, Japan Green Resources Agency (J-Green), was awarded the Technical Award for its work entitled, "Verification Study on

Soil Erosion Control Strategy in Agricultural Land of Bolivia." Dr. Samran Sombatpanit, President of WASWC, personally presented the certificates for these awards to Prof. Tetuaki Nagasawa and Mr. Toru Ikeuchi, Managing Director of the Overseas Activities Department, J-Green.

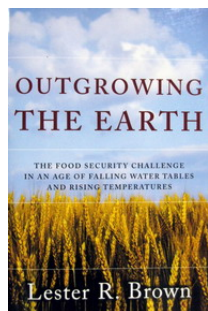
Through this symposium, we were able to share knowledge and exchange ideas concerning technology transfer and participatory strategies based on actual experiences in developing countries. This enabled the symposium to lay valuable groundwork for future international cooperation in participatory strategies for soil and water conservation. The book, 'Participatory Strategy for Soil and Water Conservation', containing the full papers of each presentation was published in November 2004.

For more details about the symposium and information on how to obtain a copy of the book, please contact hq-erecon@nifty.com, www.erecon.jp.

– Machito Mihara (m-mihara@nodai.ac.jp) and John Caldwell (caldwelj@jircas.affrc.go.jp).

PUBLICATION REVIEWS

Outgrowing the Earth: The food security challenge in an age of falling water tables and rising temperatures, Lester R Brown, Earth Policy Institute, Norton and Co., New York. 2004. 239 pp. Paperback: ISBN 0-393-32725-6, US\$15.95; Clothbound: ISBN 0-393-06070-5, epi@earth-policy.org, www.earth-policy.org



Lester R Brown is not only chief flag bearer of the international environmental cause, but has become the master of getting its messages across. "Outgrowing the Earth; the food security challenge in an age of falling water tables and rising temperatures" is a remarkable achievement, having been put together in a period of just 5 months from decision to publication.

Skillfully crafted and full of statistics and analysis, it is carefully studded with easy-to-understand graphics (though why include just three, poor quality photos? Better without!). Furthermore it is written in simple language that constructs the core certainties of the book. The reader sails through, receiving gentle and helpful reminders of the key numbers and arguments along the way. It is pleasing that Brown graciously acknowledges the very considerable help of his support team.

Although food security is an old concern of Brown's (and some of his favorite arguments are recycled herein), he has evidently been freshly stung. What by? Basically the fact that in each of the last four years world grain production has fallen short of consumption – and most particularly because China became an importer of grain for the first time in 2004. Add to that the deadly cocktail of climate change and water shortages, and Brown believes we are in danger of a man-made disaster. This means not just hunger, but rapidly rising food prices and consequent political instability in countries with urban poverty.

Two nations are put forward as special cases. The first is China which has recently seen a series of grain harvest decreases, and dramatically turned to world markets after exhausting stocks: the author reminds us that he predicted that this would happen, but even he is surprised by how quickly it has occurred. The second case is Brazil. Here, the

gains from expanding cereal farming would be more than offset by losses of forest area – and ensuing environmental catastrophe.

There is a well-researched sub-section on soybean, with its dramatic recent spread in the Americas.

There is detail on the rise of aquaculture and on the changing global pattern of livestock consumption. The importance of returning faecal and fluid waste from cities to the countryside in order to close nutrient cycles is also, correctly, highlighted. Climate change however is given disappointingly superficial treatment. Of course, Brown's stance is defiant: we caused the mess, now we need to clean it up. Fine. But surely more could have been made of aspects such as the connection between no-till farming (which is indeed mentioned) and carbon sequestration (which hardly gets a look-in)? What about the intriguing possibility of market forces driving better land management through carbon trading schemes? Genetic modification of crops is given short shrift – as might be expected in a book of this nature. But its inexorable spread will, many believe, be key in improving and stabilizing yields.

Lester R Brown may not think of himself like this, but history might actually judge him a better monitor and analyst of current and historic trends than clairvoyant. When he flags, for example, the "shrinking backlog of technology" that will quickly cap crop yields from now on, this sounds remarkably familiar. Ah yes! – his 1978 warning about a "dwindling backlog of technology" in "The worldwide loss of cropland". Since then, cereal yields have bucked his predictions and risen globally by more than 50%.

Perhaps there is more natural resilience and human ingenuity in the world than he imagines? Let's hope so. But it would be churlish to criticize someone who bravely puts his head above the parapet. In my review of 'Plan B', his last book, I wrote: "the question here is: do environmental improvements occur because of, or despite, such environmental voices? Let's err on the side of caution and admit that however much we might disagree with tone or specifics, someone needs to sound the warnings". No one does it better than Lester R Brown – and his dedicated team.

- Will Critchley, Vrije Universiteit Amsterdam, The Netherlands. wrs.critchley@vu.dienst.nl

Ground and Water Bioengineering for Erosion Control and Slope Stabilization, Edited by David H. Barker, Alex J. Watson, Samran Sombatpanit, Ben Northcutt, and Amado R. Maglinao, Published by Science Publishers, Inc., Enfield (NH), USA, info@scipub.net, www.scipub.net, 2004, 419 pp. ISBN 1-57808-209-9. Hardcover, \$75

This book contains 37 papers given at the First Asia-Pacific Conference on Ground and Water Bioengineering for Erosion Control and Slope Stabilization held in Manila in April, 1999. The papers have been updated since the conference, and represent the state of the art regarding ground and water bioengineering, particularly for the Asia-Pacific region. The focus of the book is on solving real world problems using ground and water bioengineering. Each of the 37 papers presents unique problems and approaches.

The book is broken into four nearly equal sections, each preceded by an introduction to that section of the book. These sections are:

1. Bioengineering practice for infrastructure
2. Forestry
3. Watershed management and agriculture
4. Restoration

Papers in each section describe projects from various regions of the world. In Section 1, Bioengineering Practice for Infrastructure, 4 of the 9 papers are related to highway construction in the Philippines, China and Nepal. One paper discusses fifteen years of Bioengineering in SE Asia. It contains a table on the tensile strength of roots of various plants. Vegetation for surface protection for steep slopes in Hong Kong is discussed. The paper on Bioengineering in Nepal contains much design information.

In Section 2 Forestry, most papers contain a considerable amount of quantitative information useful in the

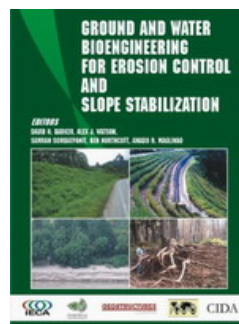
design of projects and the selection of treatments and materials. Again, the authors came from a wide range of countries – Italy, Australia, China, Japan, United States, New Zealand, Egypt, India and Bangladesh.

Watershed Management and Agriculture authors also encompassed a wide range of countries. Again, a considerable number of the papers contained experimental data concerning the effect of treatments on yield, soil erosion and sediment delivery. Treatments included filter strips, agroforestry, vetiver grass, and other grasses. The paper by Samra of India on Bioengineering Measures for Soil and Water Conservation in India was very comprehensive, with much data and information.

Ben Northcutt, executive director of the International Erosion Control Association, in his introduction to the section on Restoration, makes the point that erosion control is more effective, less expensive and requires less maintenance than does sediment control. In this section, several papers were related to vegetation of difficult slopes. One particular challenge was the rehabilitation of dam slopes that would be maintenance free for a thousand years.

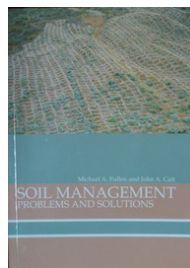
This review does little justice to the wide use of ground and water bioengineering cases described in this book. For those who are involved in erosion control and slope stabilization, this book should be in your library. It is clear that bioengineering is a major weapon in the fight against environmental degradation caused by soil erosion and sedimentation. This book is helpful in explaining the use of bioengineering in this struggle.

– John Laflen, laflen@wctatel.net

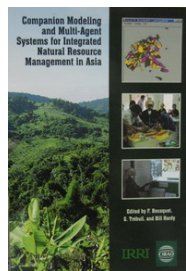


INFORMATION SOURCES

Books, Proceedings, Manuals and Reports

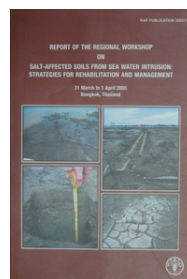


Soil Management: Problems and Solutions, by Michael A. Fullen (m.fullen@wlv.ac.uk) and John A. Catt, 2004. 269 pp. ISBN 0 340 80711 3. Publisher by Arnold (a member of the Hodder Headline Group, www.arnoldpublishers.com, Oxford University Press distributes in the United States. A review may be published in the next issue.



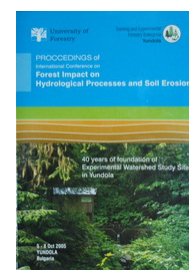
Companion Modelling and Multi-agent Systems for Integrated Natural Resource Management in Asia, Bousquet F., Trébuil G. and Hardy, B. (eds). 2005. Los Baños, Philippines: International Rice Research Institute (IRRI). 360 pp. ISBN 971-22-0208-9. In this volume, there is an interesting chapter, a multi-agent model linked to a GIS to explore the relationship

between crop diversification and land degradation in northern Thailand highlands, by Trébuil, G., Bousquet, F., Ekasingh, B., Baron, C. and Le Page, C. pp. 167-90. Contact Guy Trébuil at guy.t@chula.ac.th and trebuil@cirad.fr for information about its availability.

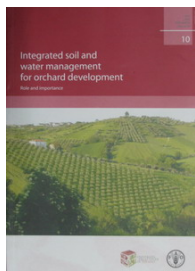


Report of the Regional Workshop on Salt-affected Soils from Sea Water Intrusion: Strategies for Rehabilitation and Management (March 31-April 1, 2005), FAO RAP Publication 2005/11, 57 pp. Available from Yuji Niino, FAO Regional Office for Asia and the Pacific, Maliwan Mansion, 39 Phra Atit Rd., Bangkok 10200, Thailand. Yuji.Niino@fao.org.

Forest Impact on Hydrological Processes and Soil Erosion, a proceedings from an international conference of the same title, held at Yundola, Bulgaria, October 5-18, 2005, on the occasion of the 40th year of the foundation of the Experimental Watershed Study Site. Rafailov, G., Gergov, G., Raev, I., Marinov, I.T. and Rafailova, E. (eds), 328 pp. ISBN 954-332-011-X. Available from Elena Rafailova at erafailova@hotmail.com.



FAO Land and Water Bulletin No. 10 – Integrated soil and water management for orchard development: Role and importance. This publication discusses the role and importance of integrated soil and water management in olive orchards and vineyards and it is



intended to highlight the better use of resources. This book will contribute to raising awareness of the possibilities for the better use of rainwater and improved management of soils with reduced erosion. It will be useful to anyone concerned with maintaining and improving the quality of soil, including farmers, researchers, advisory staff, consultants and technical decision-

makers. Note: This is the Proceedings of the International Seminar of the same title, held at the College of Agricultural Sciences, University of Teramo, Italy, May 8-10, 2004. Edited by José Benites (jose.benites@fao.org). Michele Pisante (mpisante@unite.it) and Fabio Stagnari, 154 pp. ISBN 92-5-105347-2.

FAO Land and Water Bulletin No. 11 – Drought-resistant soils: Optimization of soil moisture for sustainable plant production.

Under low and variable rainfall conditions, efficient soil moisture management is a good way for improving water use efficiency. Recognizing the importance of soil moisture an electronic conference was organized to identify, describe, discuss and promote actions that will assist farmers to improve water-use efficiency in rainfed agriculture and drought-proof their system. The present publication contains an analytic summary of the conference discussions, the abstracts of papers submitted during the conference, as well as the discussion papers prepared to introduce the different topics. In keeping with the electronic character of the workshop, the complete materials are included on the CD-ROM that accompanies this document.

FAO Soil Bulletin No. 80 - The importance of soil organic matter: Key to drought resistant soil and sustained food production.

This publication discusses that a key to soil restoration is to maximize the retention and recycling of organic matter and plant nutrients, and to minimize the losses of these soil components caused by leaching, runoff and erosion. However, rebuilding soil quality and health through appropriate farming practices may take several years, especially in dryland areas where limited moisture reduces biomass production and soil biological activity. Thus, the challenge is to identify soil management practices that promote soil organic matter formation and moisture retention and ensure productivity and profitability for farmers in the short term.

To order a free copy of FAO Bulletins, contact, Pilar.Pazos@fao.org; for large orders please contact publications-sales@fao.org; for on-line reading/downloading: <ftp://ftp.fao.org/agl/agll/docs/lw10e.pdf>

Proceedings of the International Conference “Eco-engineering: the use of vegetation to improve slope stability” Selected research papers from the conference are on-line in the December edition of Plant and Soil:

[http://www.springerlink.com/\(234fy145mtxrdtjv4v4y2mvu\)/ap/p/home/issue.asp?referrer=parent&backto=journal.1.145/linkingpublicationresults.1:100326.1](http://www.springerlink.com/(234fy145mtxrdtjv4v4y2mvu)/ap/p/home/issue.asp?referrer=parent&backto=journal.1.145/linkingpublicationresults.1:100326.1)

These papers can be purchased directly on-line, or you can contact the corresponding author directly by email to ask for a reprint (the email address of the corresponding author is written beneath the abstract in each case). Several selected research papers are also in press in the journal Geotechnical and Geological Engineering. All papers are

included in the book of conference proceedings, still in press, and published next year by Springer

Farming and Soil Carbon: A Partial Solution to the Global Warming Problem.

A report recently published by the Minnesota Project is intended to demystify what agricultural carbon sequestration can and cannot achieve, and to encourage debate about policy options related to agriculture. This report will be useful for both renewable energy advocates, who may not know much about farming, and agriculture advocates, who may not closely follow the global warming debate.

The report examines what agricultural carbon sequestration is and what it can accomplish in a question and answer form. It also presents current policy options and recommendations for the future that could increase carbon capture on agricultural lands.

The report can be downloaded from the Minnesota Project website at http://www.mnproject.org/pdf/Farming-Carbon%20final_web_10-2005%20, www.mnproject.org. A paper copy is available by contacting Amanda Bilek at 651-645-6159 x.5, abilek@mnproject.org.

Journals, Magazines, Newsletters and Brochures

Between the Lines Newsletter is UNDP Equator Initiative's quarterly newsletter aimed to champion the role of local communities and indigenous peoples in the conservation of biodiversity and reduction of poverty where they overlap in their greatest concentrations within the equatorial belt. The newsletter highlights success stories, recent events, secretariat and community news.

The Equator Initiative is dedicated to (i) celebrating successful local initiatives, (ii) creating opportunities for sharing community experiences and best practice, (iii) informing policy and forging an enabling environment for local action, and (iv) building the capacity of grassroots organizations to deliver results and scale-up impact. UNDP Equator Initiative is a partnership of the United Nations, civil society, business, governments and communities.

The next Between the Lines is due to be released in mid January to launch the next round of the Equator Prize. The Equator Prize is a prestigious international award that recognizes outstanding local efforts to reduce poverty through the conservation of biodiversity.

Please join our network by emailing equatorinitiative@undp.org or visiting the website www.undp.org/equatorinitiative.

Lowland Technology International Journal, a journal of the International Association of Lowland Technology, is now available up to Vol. 7, No. 2 (starting from year 1999 as Vol. 1, with two numbers per year). See more details in <http://www.ilt.saga-u.ac.jp/ialt/lti/>. Issues older than one year are downloadable at no cost. Recent articles include: THERMAL CONSOLIDATION OF SOFT BANGKOK, ANALYSIS OF LAND SUBSIDENCE IN SHANGHAI, and FACTORS CONTROLLING THE SORPTION OF HEAVY METALS ON ARIAKE CLAY.

Tom's Soil Tidbits (a sporadic newsletter for local soils folk). **Tom Goddard** (tom.goddard@gov.ab.ca) sends out a number of his newsletters to his friends and colleagues several times a year. The last issue of this year (Dec 2005)

contains eight short articles. Tom, a WASWC Associate Editor, will be glad to add you into his mailing list.

Note: Tom is a practical man! You can learn a lot of things from him. – Ed.

Saudi Aramco World, a unique and richly illustrated bimonthly magazine to increase cross-cultural understanding, to broaden the knowledge of the culture of the Arab and Muslim worlds and the history, geography and economy of Saudi Arabia and their connection with the West. Saudi Aramco World is distributed to a limited number of interested readers. 52 pp. ISSN 1530-5821. For FREE subscription write to: Saudi Aramco World, Box 469008, Escondido, CA 92046-9008,



USA. Back issues from 1960 are downloadable from www.saudiaramcoworld.com, or you may write to saworld@aramcoservices.com for printed copies that are still available.

Land and Water Newsletter of the Land and Water Development Division, FAO. The purpose of the newsletter is to provide information, in English, French and Spanish (where applicable) on the activities of the Land and Water Development Division (AGL) of the FAO:

- Recent publications
- Expert consultations and regional meetings
- How to obtain updated AGL information, including through Internet access (Web, Gopher, FTP and SMTP) or locally in the countries
- Electronic conferences promoted by AGL
- Activities of networks
- Other information from correspondents.

You are invited to send your comments or requests for information to us at Land-and-water@fao.org.

Any information that you would like to transmit through the newsletter would also be welcome; however, AGL reserves the right to decide on its insertion in the newsletter.

Soil – Earth's Living Skin, by David Dent, Alfred Hartemink and John Kimble. This colorful and informative brochure is published to celebrate the International Year of Planet Earth 2005, by the Earth Sciences for Society Foundation, Leiden, The Netherlands. 16 pp. Available in pdf at www.iuss.org/Soil%20brochure%20YPE.pdf or in print, which you may request from www.esfs.org.

Websites

www.undp.org/pei This site shows the outcomes from the live webcast (called 'webstreaming' – corresponding to 'broadcasting') of the 2005 World Summit Policy Dialogue on "Investing in the Environment to Fight Poverty: The Economic Case and Priorities for Action" on September 14, 2005 in New York. The policy dialogue brought together leaders from governments, NGOs, local communities, academics and business to explore and debate key findings on the economic case for the importance of environment to poverty reduction, and to identify priority areas for investment to advance the MDG agenda. It is sponsored by the Poverty-Environment Partnership (PEP) – a network of more than 30 international development and environment agencies convened to address poverty-environment linkages within the MDG framework. Klaus Toepfer, Mary Robinson, Jeffrey Sach, Achim Steiner were among those participating in this high profile meeting.

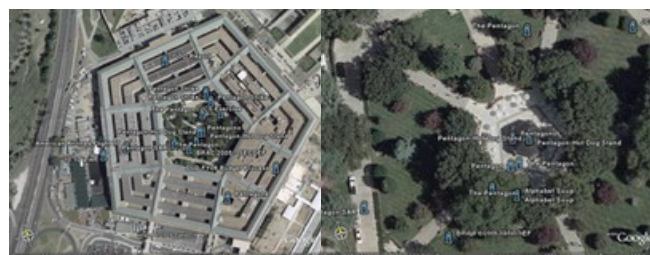
www.worldwatercouncil.org – World Water Council – WWC, an international multi-stakeholder platform

The World Water Council was established in 1996 in response to increasing concern from the global community about world water issues. Its mission is to promote awareness, build political commitment and trigger action on critical water issues at all levels, including the highest decision-making level, to facilitate the efficient management and use of water in all its dimensions and on an environmentally sustainable basis. From this site you can access www.worldwaterforum4.org for information about the 4th World Water Forum in Mexico, March 16-22, 2006.

www.worldlakes.org - World Lakes Network. LakeNet is a global network of more than 1,000 people and organizations in 100+ countries working for the conservation and sustainable management of lakes. The LakeNet Secretariat is a U.S.-based nonprofit organization dedicated to bringing together people and solutions to protect and restore the health of the world's lakes. Explore this site and our global lake database to learn more about what is being done to protect and manage lakes, and how you can help.

<http://earth.google.com/> – Google Earth. The idea is simple. It's a globe that sits inside your PC. You point and zoom to anyplace on the planet that you want to explore. Satellite images and local facts zoom into view. Tap into Google search to show local points of interest and facts. Zoom to a specific address to check out an apartment or hotel. View driving directions and even fly along your route. We invite you to try it now. Google Earth is free for personal use. Try it and you will like it. It is excellent for making appointment with someone to meet, by indicating in the downloaded map and send by e-mail. You may choose to upgrade to Google Earth Plus (\$20/ yr) or Google Earth Pro (\$400/ yr), with many more benefits.

Photos below: Pentagon Building, Washington, D.C. and details of the garden in the middle of the building. The left side of the building (see a white spot) was hit by flight AA77 during the 9/11 attack. However, this explicit illustration of Google photos has made some countries less than happy with the security concern.



Open Forum on Participatory Geographic Information Systems and Technologies – www.ppgis.net

The strategies for welfare of communities need to enable the communities to interact efficiently with policymakers. This has now become a reality with the diffusion of modern spatial information technologies including geographic information systems (GIS), low-cost global positioning systems (GPS), remote sensing image analysis software, open access to data via internet and steadily decreasing cost of computer hardware. This facilitated the integration of geographic information technologies and systems (GIT&S) into community-centered initiatives. Practitioners and researchers around the world are sharing the goal of empowering the underprivileged, adopting a variety of GIT&S to integrate multiple realities and diverse forms of information to foster social learning, support two-way communication and broaden public participation across socio-economic contexts,

locations and sectors. This has spurred a rapid development in community-based management of spatial information through what is generally termed Participatory GIS (PGIS).

PGIS is a spontaneous merger of Participatory Learning and Action (PLA) methods with GIT&S. PGIS practice uses geo-spatial information management tools ranging from sketch maps, Participatory 3D Models (P3DM), aerial photographs, satellite imagery, GPS and GIS to compose peoples' spatial knowledge in the forms of virtual or physical, 2 or 3 dimensional maps used as interactive vehicles for discussion, information exchange, analysis and as support in advocacy and decision making. Users employ the outputs mainly as media to support their arguments. The PGIS empowers the community where the maps and map products become primary conduits. The practice is multidisciplinary, integrating outside experts with socially- and gender-differentiated local knowledge experts. Georeferencing and visualizing indigenous spatial knowledge (ISK) help communities to engage in peer-to-peer dialogues and promotes their issues and concerns to high level authorities and economic forces. This gives the communities confidence in interacting with outsiders and adds authority to local knowledge. As a result, the practice may have profound implications and stimulate innovation and social change. More importantly and unlike traditional GIS applications, PGIS aims at placing control on access and use of culturally sensitive spatial data in the hands of those who generated these, thereby protecting traditional knowledge and wisdom from external exploitation. WASWC members are welcome to register in www.ppgis.net to get more information and involvement in group discussion.

- Giacomo Rambaldi, CTA (Technical Centre for Agricultural and Rural Cooperation ACP-EU, The Netherlands) grambaldi@iapad.org

<http://web.tickle.com/invite?test=3035&type=t> – a JFF (Just For Fun) website

A Ugandan friend, Bueno Dickens, sent me a url from Tickle Company to check my happiness. Maybe he thought I needed to. I did it and found myself happier than 44% of people who had used the service, showing I am below average! Try it yourself. – Ed.

Institution

CIRAD, the “Centre de Coopération Internationale en recherche Agronomique pour le Développement”, is a French state-owned industrial and commercial enterprise (EPIC) (www.cirad.fr). It has a mandate to contribute to the development of tropical, subtropical and Mediterranean countries through research, experimentation, training, appraisals and scientific and technical information generation and dissemination.

CIRAD targets the development of the agricultural, animal production and forestry sectors through: Improving biological material; developing agronomic production

techniques; protecting crops; increasing the quantity and quality of animals; developing new technologies; and, designing the tools and methods required for sustainable natural landscape management.

CIRAD works on several scales, from plot to region, taking account of the views of all those involved in the development processes. It also takes part in the resulting technology transfer projects.

Training young scientists is one of CIRAD's main concerns (it hosts doctoral and post-doctoral students, amongst others). It also runs training courses for teaching, supervisory staff and technicians.

It has a highly advanced computer system for managing a bibliographical data bank on agriculture in tropical and subtropical regions. It provides information services for political and economic decision-makers and technical users.

CIRAD has seven research departments: annual crops; perennial crops; fruit and horticultural crops; animal production and veterinary medicine; forestry; land, environment and people; and advanced methods for innovation in science. These departments comprise 60 research units and operate through their own research centers, collaboration with national agricultural research systems, universities and international centers, or



development projects.

CIRAD's annual budget is close to 180 million euros. It employs 1,850 people, including 950 senior staff, working in about 50 countries worldwide, mainly in the southern-hemisphere; at national research stations, international centers, universities and private companies, as well as at its own centers in Montpellier and the French overseas departments and territories

It is also involved in a large number of development projects in conjunction with other organizations from the North and South.

CIRAD is leading the KASSA – Knowledge Assessment and Sharing on Sustainable Agriculture – project, funded by the European Commission. The KASSA (<http://kassa.cirad.fr>) consortium involves 31 R&D teams belonging to 28 institutions from 18 countries in Europe, Asia, North Africa and Latin America. KASSA intends to build up a comprehensive knowledge base through assembling international experience on sustainable agriculture and emphasizing pathways, conditions and challenges to be considered by the stakeholders in order to improve agricultural sustainability.

- Rabah Lahmar, CIRAD-Ca, TA 74/09, Avenue Agropolis, 34398 Montpellier Cedex 05, France. lahmar@cirad.fr

STOP PRESS

Dr. Andrew Noble, Head IWMI-SEA, asked us to inform friends and colleagues that, from mid-January onward, the office of the International Water Management Institute, Southeast Asia Regional Office (IWMI-SEA) will be at the Headquarters of the WorldFish (another CGIAR institute) in Penang, Malaysia.

The physical address is: IWMI-SEA, WorldFish Centre, Jalan Batu Maung, Batu Maung, 11960 Bayan Lepas, Penang, Malaysia. The Postal Address is: IWMI-SEA, PO Box 500 GPO, 10670 Penang, Malaysia. Andrew's e-mail is a.noble@cgiar.org.

We wish you and IWMI-SEA the best of luck, Andrew.

(IWMI-SEA is an Organization member of WASWC since 2005)