



WORLD ASSOCIATION OF
SOIL & WATER CONSERVATION
(WASWC)

NEWSLETTER

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In English, Spanish, French, Chinese, Portuguese, Bahasa, Russian,
Vietnamese, Arabic, Thai
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Conserving Soil and Water Worldwide – [Join WASWC](#)

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

WASWC Mission: To promote worldwide the application of wise soil and water management practices that will improve and safeguard the quality of land and water resources so that they continue to meet the needs of agriculture, society and nature.

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

President's Message

Dear WASWC members, colleagues and friends,



Before sending you the season's greetings, it is good opportunity to say big THANKS to Samran for all his work and present initiatives regarding improvements of our Association. He is probably tired of the tremendous work, but is always ready to help and to be consulted for many issues, which will be continued in future also, I am sure.

WASWC has had an active and successful year. After deliberations regarding the title of the series of the conferences to be organized under the propositions/requirements of the WASWAC, we decided for the title – LANDCON (LAND CONservation). The World Association of Soil and Water Conservation helped in organizational and professional manner in eight LANDCON meetings that were held in 2009. It was very important. Land conservation and erosion control require a site specific approach, the setting up of a persistent institutional activity in the affected river basins – an activity that must be legally based to be effective. In this sense, each region subject to land erosion needs to develop competent teams of experts able to deal with the site-specific problems, and to ensure institutional and legal support for this activity. An important aspect is the multidisciplinary character of the activity. It is essential to organize periodical exchange of information about the experiences of such teams operating in different regions. For the continuity of the ongoing efforts it is essential to educate and train young professionals to take part in the activity. The LANDCON offered an excellent opportunity in this regard and it can be recommended to continue the organization of similar meetings in the future, in different parts of the globe.

The issue whether the abbreviated name of our association should change from **WASWC** to **WASWAC** was debated first among all members and later in the council. This has resulted in that we will change the name as such, in order to facilitate pronunciation and bring in more members. Therefore, **the new name of WASWAC will be used from January 1, 2010 onward.**

One of the important activities was monthly WASWC HOT NEWS announcing awards, funds, scholarships, training, appointments, jobs and all major meetings worldwide. The WASWC Award Committee agreed to grant Dr Rattan Lal (Professor at Ohio State University) the Norman Hudson Memorial Award for the year 2009.

Special Publication (SP) No. 4, "Soil and Water Assessment Tool (SWAT): Global Applications", edited by Jeff Arnold et al. was published in 2009. The WASWC has accepted to produce this book by using the same principle as the previous volume, so that it can be distributed to worldwide readers for their use at an affordable price. The book comes with a DVD that contains some computer models that the readers may work to learn and experiment with. By this way the readers may be in a position to seek advice from editors and contributors regarding any of the matter that they want to learn more or if they have any problem. Such privilege is a unique benefit that is always available for WASWC members, as well as other readers of WASWC books. We will continue to produce this series of SPs when there are issues that deserve to disseminate to members and non-members worldwide.

Regarding new units in decentralization program, two WASWC Students' Forums were established three years ago at Faculty of Forestry in University of Belgrade, Serbia and Skopje University in Macedonia. The Students Forum of WASWC at Belgrade was actively involved in organization of LANDCON 0905 conference held at Tara Mountain in Serbia during May 2009. The basic aim of these fora is to encourage young members, who ultimately will be future experts in SWC and ambassadors of WASWC ethos.

Last year, Ian Hannam and myself initiated the idea of establishing the network/project on law issues in SWC in Balkans. Conceptual paper of the project was prepared by Ian Hannam. This idea was strengthened at the LANDCON 0905 in Serbia by Ben Boer and me.

Regarding better organization of the activities, WASWC has recognized its structure and has expanded membership to cover about 100 countries, with about 5,000 active soil and water conservationists in all the membership categories communicating with the Association at present. We emphasized the number of councilors from nine (in 2007) to twenty three (in 2008) and to twenty six (in 2009) dealing with the issues such as secretariat, membership, editing (newsletter, journal, proceedings and special publications), award issues, translating newsletter into many languages, special subject matters (law and policy issues, no tillage etc). Friends, we all are serving WASWAC on voluntarily basis. Bearing in mind that all of us are quite busy with academic and professional works, I take this opportunity to thank all of you who have accepted these important roles.

The WASWAC Council will work in the future with the help of VPs on strengthening WASWAC products, disseminating idea of new WASWAC units (students' forums), helping organization of international meetings regarding soil and water/environment protection, establishing law issues in SWC, etc. It is a good opportunity to have first Council meeting of WASWAC during LANDCON 1010 in October 2010 in China. We can discuss our

development strategies for the future during that meeting. But before that we can start discussion through e-mail and finalize the agenda of the meeting. The secretariat will collect all suggestions and propose a report at the first council meeting. In the end, I would like to wish all of you A VERY HAPPY NEW YEAR 2010, good health, progress in your life and work, hoping that our joint activities would allow us to achieve the WASWAC mission.

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The name WASWAC will be used from January 1, 2010.

Editor's Note

Dear colleagues and friends,



This is the last issue of 2009 and when I look back to analyze the outcome of our efforts in editing this newsletter, I sense both positive as well as negative feelings. The positive feelings arise when I see that we are successfully continuing with the publication of our newsletter which is considered to be the flagship of our association. To date we have done this with the help of Dr Samran, who had been a guiding force for our editorial board. Though he has asked us to do it independently from 2010 onwards, but unofficially we shall be seeking his guidance as and when we shall need it. I want this flagship to achieve new heights.

Friends, the negative feelings arise when I see that I did not get much response from the readers of the newsletter. This was despite of the fact that I invited the stalwarts to come out with suggestions to make the newsletter more interesting for our members. I have always said that this newsletter, instead of being a document of events taking place here and there, should act as a platform of interactions between our experienced stalwarts and the young and budding scientists. Our President, Dr Miodrag has made consistent efforts to bring the young scientists and scholars at the forefront as reflected in LANDCON 0905 meeting at Serbia. I want to utilize this newsletter for the same purpose.

Dr Samran some time ago suggested me if we could change the name of this newsletter, essentially to avoid the repeated use of the word 'news', since the WASWC HOT NEWS was borne out of the WASWC Newsletter in 2006. Changing the name to any other suitable name (e.g. to **WASWAC Bulletin**, **WASWAC Magazine** or any other word) may enable us to modify the structure of this publication and make it a useful platform for discussions of international importance and for gaining from the rich experience of our elders. I feel that there is strong need for our executives to sit together and decide on this matter so that we may come out with a more comprehensive document which is full of knowledge for our younger generation. Many of our members from NGOs and are doing a good job in conserving the land and water, need our expertise in making their work much more efficient. Members are welcome to share opinion about this issue with us.

Friends, I once again appeal to all of you to come forward and help us in making the things which are expected at the international level. I invite the success stories from different organizations and different countries to be published in the newsletter so that these may act as guiding paths for other organizations struggling to achieve similar objectives.

(SURINDER S KUKAL)

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AWARDS

▲ COMLAND DISTINGUISHED SCHOLAR AWARD

<http://senr.osu.edu/newsitem.asp?id=70&itemid=1981>

A geographical organization, **the International Geographical Union**, presented **Rattan Lal** the Commission on Land Degradation and Desertification (COMLAND) **Distinguished Scholar Award** for his role in land restoration as it relates to climate change and food security. Lal recently accepted the award at the Helmholtz Center for Environmental Research in Magdeburg, Germany. The COMLAND Award recognizes those who advance the science, practices and policies of land degradation and restoration in relation to climate change and food security.



▲ IMLI AWARD PRESENTED BY IMO

International Maritime Organization (IMO) Secretary-General Mitropoulos presented the “IMLI Award for Meritorious Contribution towards the Dissemination, Harmonization and Implementation of International Maritime Law” to **Sasakawa**, Chairman of the Nippon Foundation. Under his leadership, the Nippon Foundation has, *inter alia*, been involved in a project with IMO in the development a new framework to enhance navigational safety, security and environmental protection in the Straits of Malacca and Singapore. Hats off to Sasakawa! (IMLI = International Marin Law Institute)

▲ ITTO AWARDS FELLOWSHIPS FOR FOREST-RELATED ACTIVITIES

The International Tropical Timber Organization (ITTO) awarded 23 fellowships in June 2009, offered through the Freezailah Fellowship Fund. The fellowships aim to promote human resource development and to strengthen professional expertise in member countries in tropical forestry and related disciplines. Activities sponsored through the fellowships include: attending various forest-related conferences including the 13th World Forestry Congress in Argentina in October 2009; attending courses and undertaking post-graduate degrees in, *inter alia*, forest ecosystem and climate change management, climate change and desertification, and climate change and development; and preparing and publishing documents. All together, the fellowship recipients represent 13 different countries and include 7 female fellows. We feel that this is the best way of promoting awareness among the people about the consequences of climate change.

▲ African Women in Agricultural Research and Development Awards Announced

African Women in Agricultural Research and Development (AWARD) has announced the selection of 61 women scientists who will receive the innovative AWARD Fellowship, designed to boost the female talent pool for African agriculture. Chosen from nearly 500 applicants from 10 sub-Saharan African countries, these women bring with them scientific and development expertise that has great potential to tackle the food crisis and climate change while improving the daily lives of small-scale farmers.

This is the second year AWARD has identified and honored outstanding African women scientists to receive career development resources aimed at strengthening their expertise as pro-poor researchers while also positioning them as leaders. They come from 48 different institutions of education and research in the region. For more information see <http://fellowsupdate.wordpress.com/>.

▲ India's ICAR Professor Honored with Ernesto Illy Trieste Science Prize

India's climate change expert **Dr. P.K. Aggarwal**, Indian Council of Agricultural Research professor at the Indian Agricultural Research Institute (IARI), New Delhi, was awarded the Ernesto Illy Trieste Science Prize by the Italy-based Academy of Sciences for the Developing World (TWAS), the world's foremost international academy for scientists from the developing world. Prof. Aggarwal shared the prize with **Carlos Clemente Cerri** from Brazil for the pioneering work on the intricate relationship between agriculture, climate and the environment.

The two eminent scientists were honored at the opening ceremony of the TWAS 11th General Conference, in Durban, on October 20, 2009 and shared a US\$100,000 award funded by the Ernesto Illy Foundation. Professor Aggarwal is one of India's leading climate change experts and has developed a broad range of innovative strategies to examine the potential impact of global warming on agriculture, especially in India. The award recognizes his scientific leadership and contribution to enhance the understanding of the vulnerability of agriculture in the developing countries to climate change.

For more details visit <http://twas.ictp.it/news/press-releases/ernesto-illy-trieste-science-prize-winners-2009> and <http://www.icar.org.in/?q=node/736>

▲ AGRICULTURAL RESEARCHER RECEIVES JAPAN INTERNATIONAL AWARD 2009

Dr Maria Junemie Hazel Leonida Lebata-Ramos, Filipino researcher recently received the Japan International Award 2009 for Young Agricultural Researchers for her outstanding contribution to the development of technologies for the mitigation of food and environmental problems. The Philippine Embassy in Tokyo said the Japanese Agriculture, Forestry and Fisheries Research Council of the Ministry of Agriculture, Forestry and Fisheries (MAFF) gave the award to Dr Lebata-Ramos, a researcher for the Southeast Asian Fisheries Development Center (SEAFDEC). She was conferred the commendation award on November 4, 2009 for her research work entitled, “Stock enhancement of commercially important and threatened marine invertebrates in tropical areas.” The Embassy said that “the award bestowed on Dr. Lebata-Ramos is a reaffirmation of her achievement in fisheries and marine research that serves to promote food productivity, food security and environmental and marine conservation. Her winning this prestigious award will help inspire more researchers to follow her path.” Dr. Lebata-Ramos is currently the program leader in the aquatic ecology program at SEAFDEC. The organization provides sustainable fisheries development in the region, such as fisheries and aquaculture technologies and practices, post-harvest technology, international and intra-regional fish trade, fisheries management concepts and approaches, policy and advisory services.

– *Pia Lee-Brago* <http://www.philstar.com/article.aspx?articleid=523474&publicationsubcategoryid=63>

▲ Vetiver Awards



To encourage more farmers to involve in vetiver handicraft to earn more profit in addition to soil and water conservation, The Vetiver Network International recently gave Vetiver Handicraft Awards to 4 Chinese farmers who did excellent jobs in vetiver handicraft. They received both certificates and money totaling US\$500. Based on their experience and contributions, Ms Shi Lingyan and Mr. Bi Weijun received Technical Excellence Awards (left photo) while the Vetiver Handicraft Awards were given to Mr Shi Xianzhou and Ms Wu Songlian (right photo).

– Liyu Xu lyxu@issas.ac.cn

NOTE: WE ANNOUNCE AVAILABLE AWARDS TO APPLY FOR IN OUR MONTHLY HOT NEWS

NEW OFFICER

Eugenija Baksiene, WASWC Vice President for Lithuania, eugenija.baksiene@voke.lzi.lt



Eugenija Baksiene graduated from Faculty of Agronomy, Lithuanian Academy of Agriculture in Kaunas and obtained B.Sc. and M.Sc. degrees in Scientific Agronomy in 1983. She started her work at the Voke Branch of Lithuanian Institute of Agriculture in 1984. In 1991 she was awarded her Ph.D. for a thesis “Efficiency of lake silt (sapropel) on field crops rotation in different soils”. Ms. Eugenija’s main objective of research is to estimate the long-term influence of sapropel on changes in sandy loam soil chemical and physical properties, pollution. She also investigates soil quality and fertility problems in ecological farming systems and phenological observation of plants

in Lithuania.

She has participated in a number of national and international conferences and other scientific events. Besides WASWC, she is also a member of the ESSC, Soil Association of Lithuania and Nordic Association of Agricultural Scientists (NJF). (Ed.: Eugenija replaces ‘Benas’ Benediktas Jankauskas who has retired recently.)

OBITUARY

Professor Carolus Sys passed away

It is with great sadness that I must report the passing of Dr. Ir. Carolus SYS, Emeritus Professor of Soil Science, Ghent University. He died on October 1, 2009 in the University Hospital in Gent at the age of 85.

- Dr E Van Ranst, Ghent University, Belgium (E-mail: eric.vanranst@UGent.be, PLR: <http://www.plr.ugent.be>, Department Geology and Soil Science: <http://www.earthweb.ugent.be>)

ASSOCIATION NEWS

There were two deliberations during 2009 – Idea of producing the LANDCON e-LIBRARY and deliberations of the acronym WASWC-WASWAC by the members and the Council. A great majority of WASWC members favoured the production of LANDCONe-LIBRARY. It is now running process and Dr Samran is making hard efforts to compile the valuable material for the e-library. The deliberations regarding changing the acronym WASWC to WASWAC was approved by the Council based on the majority opinion of the members as well as Council. The simple purpose of changing the acronym of association from WASWC to WASWAC was its easy pronunciation as WAS-WAC, otherwise it was difficult to pronounce during oral deliberations and discussions and, importantly, when trying to introduce our association to colleagues who have not yet known it.

MEMBERS’ FORUM

▲ **What Our Member Says about** The 18th Triennial ‘International Soil and Tillage Research Organization’ (ISTRO) Conference held in Izmir (Turkey), June 15-19, 2009 (see details in p. 17 this issue)

As an ISTRO member, I express my sincere thanks to the Organizer for organizing this wonderful 18th Triennial ISTRO Conference at Izmir. Everything, starting from the people's greetings, the venue, to the Conference themes and tours was perfect! This was certainly the best Conference I had ever attended! Not only the atmosphere, food and melodies were pleasant, but also people's behaviour and attitude to help all of us was extremely enjoyable! As a scholarship winner, my experience was special! Some images of the Conference are attached to portray some of the ambience of the Conference!

The venue for the next 19th Triennial ISTRO Conference will be in Uruguay in 2012. The next President of ISTRO will be Professor Oswaldo Ernst, Universidad de la Republica Oriental del Uruguay, Uruguay. We, on behalf of all members of the ISTRO, congratulate Professor Oswaldo Ernst!

Ranjan Bhattacharyya

Ph.D. Student, School of Applied Sciences, University of Wolverhampton, UK and Scientist Vivekananda Institute of Hill Agriculture, Almora 263601, India (ranjan_vpkas@yahoo.com)

▲ What Our Member Says about LANDCON e-LIBRARY

To: **Samran Sombatpanit**

Please be very, very careful of what you are planning to do with the LANDCON e-LIBRARY.... If people will notice that their work or data are published in your system illegally, they will pursue you in court and you will face serious problem. There is a law concerning intellectual property under which authors are protected.

Good luck,

...

Scientist

Reply: Please be comfortable with it. We will essentially put papers or data sent from their authors. If we are not sure whether a 'technical' paper sent to us is free from copyright restriction, we will put only p. 1 in the DVD, just to let our readers know about the existence of the paper with such title, author(s), contact address and the abstract. However, I thank you for the warning.

As our major purposes for doing this e-LIBRARY project are (1) to disseminate information about research works and other news about soil and water conservation from various parts of the world, and (2) to preserve the works that have been available during past 30 years in digital format, we will exercise our utmost caution, so that there will be no serious case that will bring us or anyone else to court.

NOTE: We are pretty sure that the works preserved in discs that will be sent to thousands of people around the world will have a better chance to survive (for centuries!) than when posted on the website. Though its usefulness and practicality may not match with the website system in the modern world, dissemination through the DVD has obvious advantages in less developed areas that do not enjoy fast internet or have no internet at all.

We also want to inform other members who have not sent their stuff to us for including in the e-LIBRARY to please send. ALL the works still belong to you/your organization – with WASWAC functioning ONLY as the facilitator. This is NOT a money-motivated project, which you may easily compare like this: a set of 4 DVDs that contain around 10,000 papers and documents will cost only US\$10-16, depending on to what category the purchaser belongs. That same amount of money may not buy even ONE technical paper online today!

Samran Sombatpanit

MEMBER'S CONTRIBUTION

▣ SOIL SCIENTIST DEVELOPS 10 PRINCIPLES TO SUSTAINABLE SOIL MANAGEMENT

From food security to climate change to energy demands, the world faces a myriad of critical sustainability issues, all whose potential solution may lie right beneath our feet.

Rattan Lal, an Ohio State University Soil Scientist with the Ohio Agricultural Research and Development Center, suggests that soil and its resources are the answer, and sustainability can be achieved through the realization of 10 basic management principles.

"We are dealing with 10 global issues at the moment: food security; availability of water; climate change; energy demand; waste disposal; extinction of biodiversity; soil degradation and desertification; poverty; political and ethnic instability; and rapid population increase. The solution to all of these lies in soil management," says Lal, with the School of Environment and Natural Resources. "It doesn't mean that agriculture is the only solution, but it plays a major role in addressing these issues."

Lal synthesized years of scientific literature on soil degradation and the positive impacts of restoration and developed 10 basic principles of sustainable soil management. The principles, published in the January/ February 2009 issue of Journal of Soil and Water Conservation, as well as the journal Agronomy for Sustainable Development, are meant to encourage policymakers to support soil amendment practices.

"I'd like to see policymakers implement policies which will encourage the adoption of such practices as conservation agriculture, integrated nutrient management, crop rotation, agroforestry – techniques that the scientific community knows would sustain soils and agricultural practices," Lal says.

Lal's principles of sustainable soil management are:

- Soil degradation is a biophysical process, but driven by social, economic and political forces. Minimizing degradation and enhancing restoration depends on addressing the human dimensions that drive land misuse.
- When people are suffering from poverty, they pass that suffering on to the land. The stewardship concept is important only when the basic needs are adequately met.
- You cannot take more out of the soil than what you put in it without degrading its quality. Outputs must balance inputs, says Lal.
- Marginal soils cultivated with marginal inputs produce marginal yields and support marginal living.
- Plants cannot differentiate between organic and inorganic inputs; therefore, it is a matter of logistics in making nutrients available in sufficient quantity, in the appropriate form, and at the right time for optimum growth and yields.
- Mining carbon has the same effect on global warming, whether it is through extractive farming (tillage) or through the burning of fossil fuels.
- Soils can be a source of carbon extraction or a sink for carbon storage, depending on how the soil is managed. If used as a sink, the soil has the capacity to store three gigatons of carbon a year, translating into a reduction of 50 ppm of carbon dioxide in the atmosphere over the next five decades.
- Even the most elite crop varieties developed through biotechnology and genetic engineering cannot extract water and nutrients from the soil where they do not exist. "This principle is very important. There are those who argue that genetically engineered varieties will solve production problems. Not necessarily true," Lal says. "Improvements can only be realized if crops are grown on well-managed soils."
- Improved soil management is the engine of economic development in rural communities, especially in developing countries.
- Traditional knowledge and modern innovations go hand-in-hand. One cannot solve current global issues without the other. "We can develop upon traditional knowledge, but those who ignore modern innovations must be prepared to endure more sufferings," Lal says.

Lal says he developed the soil management principles to draw attention to the United Nations Millennium Development Goals - a commitment to solve and/or improve upon eight global issues by 2015. The issues include poverty and hunger, universal education, gender equality, child health, maternal health, HIV/AIDS, environmental sustainability and global partnerships.

"The UN defined these goals in 2000 and now we know that none of these goals will be met by 2015. Why? Because soil and agricultural management are not being addressed," Lal says. "If we do not address these issues now by paying more attention to how we can sustain the soil, then 20 years from now we will be talking about the very same things."

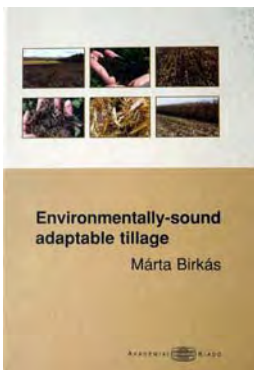
BOOK REVIEW: Environmentally-Sound Adaptable Tillage

Márta Birkás birkas.marta@mkk.szie.hu

(with three co-authors: A. Szemők, G. Antos and M. Neményi)

2008: hardback, 351 pages: Akadémiai Kiadó, Budapest

Reviewed by William Critchley: December 2009



This thoroughly researched and fact-filled text book was first written in Hungarian – and then translated for more general readership by Balázs Breznay. Before reviewing the content, it must be said that Mr Breznay has succeeded admirably in what must have been an arduous task, given the technical complexity of the text and the need to keep it ‘readable’. It has been translated to make it accessible to a wider, Central European audience – though it will also appeal to soil scientists from a much broader geographical catchment.

Márta Birkás – together with three co-authors for specific chapters - has put together three hundred and fifty pages of condensed research findings and recommendations on tillage and the soil. The nine chapters are wide ranging in scope, though do not seem to have any specific sequence. Thus sandwiched between “*Aims of soil tillage*” (Chapter 2), and “*Effect of site factors*” (Chapter 4), appears “*Tillage – energy requirement and soil damage*”. This, in fact, hardly diminishes from the overall impact of the book – serving merely to emphasise the fact that it is reference book rather than a continuous text. But this brings me to another and more important point: would it not have been served admirably by an index? Of course it would have meant considerably more work. Perhaps in a second edition?

The book is replete with figures and table (though without a listing). Taking chapter 7 at random (“*Practical applicability of environmental conserving and energy saving tillage*”) there are 23 tables and 68 (yes, *sixty eight*) figures. This adds huge value to the text that otherwise would be much harder to digest. Machines are displayed in photographs and in drawings; numerous figures depict the impact of good and poor tillage practices on soils.

So what is the central message? Well, this is not a simplistic tome portraying the merits of traditional ploughing – or persuading us to abandon the plough. It’s a vast collection of experimental evidence to show that nothing is as simple as it seems, and answers must be sought for specific situations. As the invited foreword (here “dedication”) writer, György Várallyay puts it succinctly: “...it serves as a good example for those people waging war against over-generalisation”. That’s an important message to heed just as the battle lines are being drawn between the conventional tillage and no-till proponents in Europe and elsewhere. There is no simple answer: soils differ, slopes play a role, climates are not the same, previous soil treatment cannot be ignored and change isn’t easy – or readily accepted.

One of the strengths of this book is easily overlooked: the liberal use of historical quotations to head sections. Wisdom abounds in these. Thus we read that Ernő Kemenesy observed in 1964 “it is not nearly as important to completely invert crop residues as it is thought ... residues should be chopped, for this is the way to create a mixture of organic matter – so-called mulch – covering the surface which is regarded so highly in up-to-date tillage”. And such relatively recent (yet prescient) quotes are mixed with nuggets from the classics. Thus Vergil, two millennia ago, notes that you should “vary the crops on your land and thereby you will let it rest; leave it unploughed from time to time, and you will be even more richly rewarded”. Plinius, from the same era, announces that “Nothing causes as much damage as does neglected arable land”. Well said that man! These are gems from a book that will find its rightful place on any University bookshelf where soil science and sustainable land management are taught and studied.

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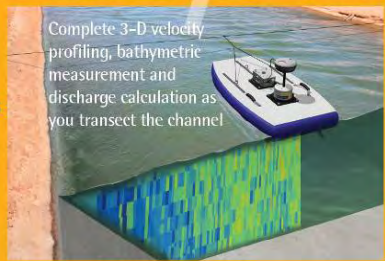


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FEATURES

CLIMATE CHANGE & Carbon Issue Highlight

▲ EARTH DAY & OIL CONSUMPTION, ENN Alert alerts@enn.com 090414

April 14, 2009; Boulder, Colorado: According to the Earth Day Network's website, it took us (collectively as a human race) about 125 years to use our first trillion barrels of oil. We're going to use up the next trillion barrels in only 30 years.

It stands to reason our increased oil usage has an impact on our environment, our health and our lives.

So this year as we celebrate Earth Day let's remember there are simple yet effective steps we can take to help preserve our world. Here are five things you can do right now to honor Earth Day this year:

1.) Replace your light bulbs with energy star bulbs. This simple step can reduce your carbon footprint by 450 pounds per year. And all you need to do is by energy efficient light bulbs and use them! There's more information here at the official Energy Star web site: http://www.energystar.gov/index.cfm?c=lighting.pr_lighting

2.) Plant a tree. Trees are Mother Nature's all-in-one air conditioner and heater. It's estimated that three properly-planted trees can reduce energy bills by as much as 30% - that's both heating and cooling. Help out by planting a tree this year on Earth Day.

You can plant one in your yard or donate one to someone. If neither of those options work for you then consider donating a tree to one of our national parks. Find more at the Arbor Day Foundation's web site: <http://www.arborday.org/trees/>

3.) Celebrate Earth Day locally. There are lots of events being held on Earth Day so find one and join in!

Whether you're a student on campus, live in the suburbs or are an urban dweller you'll find various events going on in your area. Pitch in, lend a hand and promote saving our Earth. Go to Earth Day's website to find what's happening in your town: <http://earthday.net/>

4.) Buy local, organic food. By some estimates our US-grown produce travels up to 1,500 miles before it reaches our neighborhood supermarket. When you calculate one gallon of gas creates 20 pounds of carbon dioxide you can see how much damage produce can do – and that's for US-grown food.

Buying organic saves the Earth because you aren't adding harmful chemicals into our eco-system (not to mention they aren't going into your body).

Check out Local Harvest's website for more information: <http://www.localharvest.org/buylocal.jsp>



5.) Ride an Optibike (photo at left). According to the Earth Day website, by the year 2030 the world will consume 47% more oil than it did in 2003.

And almost all of us contribute to that statistic – especially if we drive a car.

So choosing to ride the electric bicycle Optibike versus driving a car means you aren't using oil to run the bike and you aren't polluting the air when you do.

In fact your carbon footprint from riding an Optibike is very small – Optibike gets the equivalent of 2,000 miles per gallon. No hybrid can offer you that kind of gas mileage! Find out more here: <http://www.optibike.com/content/view/97/144/>

Start with these and you're bound to find many more ways you can go green this year for Earth Day – and every day after that.

▲ Soil Carbon Sequestration Impacts on Global Climate Change and Food Security, by Rattan Lal (VIEWPOINT FROM *Science* 11 June 2004, Vol. 304, no. 5677, pp. 1623-1627) (Note: The article is from 2004.)

The carbon sink capacity of the world's agricultural and degraded soils is 50 to 66% of the historic carbon loss of 42 to 78 gigatons of carbon. The rate of soil organic carbon sequestration with adoption of recommended technologies depends on soil texture and structure, rainfall, temperature, farming system, and soil management. Strategies to increase the soil carbon pool include soil restoration and woodland regeneration, no-till farming, cover crops, nutrient management, manuring and sludge application, improved grazing, water conservation and

harvesting, efficient irrigation, agroforestry practices, and growing energy crops on spare lands. An increase of 1 ton of soil carbon pool of degraded cropland soils may increase crop yield by 20 to 40 kg/ha for wheat, 10 to 20 kg/ha for maize, and 0.5 to 1 kg/ha for cowpeas. As well as enhancing food security, carbon sequestration has the potential to offset fossil fuel emissions by 0.4 to 1.2 gigatons of carbon per year, or 5 to 15% of the global fossil fuel emissions.

Carbon Management and Sequestration Center, The Ohio State University Columbus, OH 43210, USA. E-mail: jal.1@osu.edu [Read the Full Text](#)

▲ Himalayan glaciers are retreating fast



A small group of Himalayan glaciers grew in size when the earth became hotter 9,000 years ago, new research shows. Summer Rupper, professor of geology at Brigham Young University in the United States, reports in the September issue of *Quaternary Research* that a small group of Himalayan glaciers grew by several km 9,000 years ago — during an 'inter-glacial' period when central Asia grew hotter by six degrees Celsius.

Her findings are based on a model that predicts both glacier mass and energy balance at its surface under varying regional climatic factors such as temperature, humidity, cloudiness and rainfall, and wind.

Rupper reports that shifting weather patterns at the time brought more clouds and winds to the area, making it cooler and helping ice formation. Her team is now extrapolating the findings to a new project to predict future water changes in the area — now under threat as glaciers melt because of global warming. The report helps us better understand how a rise in temperature affects the height at which snow accumulates, Anil Kulkarni, coordinator of the snow and glacier project at the Space Applications Centre, Ahmedabad, told *SciDev.Net*. However, the paradox of glaciers increasing in size — and not melting — during warmer conditions occurred under very different conditions.

During the last four inter-glacial periods, including the period addressed in Rupper's research, that occurred in the past 350,000 years, carbon dioxide concentrations remained below 300 ppm. Present carbon dioxide levels have exceeded 380 ppm because of global warming, Kulkarni told a South Asian media workshop on climate change last month (27 August). Satellite data from 1962 to 2004 indicates that more than 1,000 Himalayan glaciers have retreated by around 16 percent, Kulkarni says. The glaciers are retreating at varying speeds. Some are melting faster, such as the Parbati glacier at a rate of 50 m per year and Gangotri at 28 m; while others like the Pindari glacier are retreating more slowly, at 5 m per year. The Himalayan glaciers are breaking into pieces and many are not forming new ice, "A large number of glaciers have no [ice] accumulation," Kulkarni says. Scientists at the International Centre for Integrated Mountain Development (ICIMOD) in Kathmandu, Nepal, also report large-scale melting in Himalayas of 10–60 m each year, while the Imja glacier south of Mount Everest is retreating by 74 m each year. **Source: T. V. Padma, 15 September 2009 | EN**

▲ European Agriculture releases too much CO₂, methane and nitrous oxide

Nature Geoscience (22 November 2009) | doi:10.1038/ngeo686 (from Gérard Rass, APAD General Secretary, 7 rue Surcouf, F-35170 Bruz, France, tel : 33 2 99 05 07 67, mobile : 33 6 07 40 42 59, fax : 33 2 99 05 07 68, gerard.rass@wanadoo.fr, www.apad.asso.fr)

Climate change negotiations aim to reduce net greenhouse-gas emissions by encouraging direct reductions of emissions and crediting countries for their terrestrial greenhouse-gas sinks. Ecosystem carbon dioxide uptake has offset nearly 10% of Europe's fossil fuel emissions, but not all of this may be creditable under the rules of the Kyoto Protocol. Although this treaty recognizes the importance of methane and nitrous oxide emissions, scientific research has largely focused on carbon dioxide. Here we review recent estimates of European carbon dioxide, methane and nitrous oxide fluxes between 2000 and 2005, using both top-down estimates based on atmospheric observations and bottom-up estimates derived from ground-based measurements. Both methods yield similar fluxes of greenhouse gases, suggesting that methane emissions from feedstock and nitrous oxide emissions from arable agriculture are fully compensated for by the carbon dioxide sink provided by forests and grasslands. As a result, the balance for all greenhouse gases across Europe's terrestrial biosphere is near neutral, despite carbon sequestration in forests and grasslands. The trend towards more intensive agriculture and logging is likely to make Europe's land surface a significant source of greenhouse gases. The development of land management policies which aim to reduce greenhouse gas emissions should be a priority.

FOOD & FOOD PRODUCTION Highlight

▲ **Salt tolerant rice varieties for the Irrawady Delta**, from ECHO Asia Network News, December 2009. <http://www.echonet.org/>, echoasia@echonet.org

Lingering soil salinity continues to make rice production difficult in certain districts of Myanmar's Irrawaddy Delta as a result of massive saltwater inundation during Cyclone Nargis in May 2008. In response, plant breeders with the International Rice Research Institute (IRRI) have recently announced the availability of salt tolerant rice varieties for the affected region.

Dr. R.K. Singh, Senior Scientist (Regional Plant Breeding Coordinator for Eastern and Southern Africa) for IRRI's Plant Breeding Genetics & Biotechnology Division reports that IRRI has been in regular contact with Myanmar's Department of Agriculture Research (DAR) and Ministry of Agriculture Science (MAS). Additionally, IRRI has been regularly supplying salinity tolerant rice varieties and advanced lines for these institutions to test.

According to Dr. Singh, photosensitive landraces (varieties adapted to the environment in which they have originated or are grown), such as Hnan-Kar and Letyonegyi, have been traditionally grown in the saline soils of Myanmar. Additionally, a few salt tolerant varieties have been released by local institutions. However, unable to tolerate high salinity, these new varieties are reportedly not very adaptable.

In late November, Dr. Glenn Gregorio, IRRI's Senior Scientist and Rice Breeder for salinity tolerance, informed ECHO Asia that promising salt tolerant rice varieties/breeding lines at IRRI are ready for testing in Myanmar. With some varieties already sent to DAR and MAS, according to Dr. Gregorio, seeds of these salt tolerant varieties can be sent to any group in Myanmar that is willing to test their adaptability.

"We just need a seed import permit from Myanmar so we can process the transfer," explains Gregorio.

To inquire further about the availability of the salt tolerant rice varieties, contact Dr. Gregorio at g.gregorio@cgiar.org.

▲ Ireland to ban genetically modified crops



DUBLIN - The Irish Government will ban the cultivation of all GM crops and introduce a voluntary GM-free label for food – including meat, poultry, eggs, fish, crustaceans, and dairy produce made without the use of GM animal feed.

The policy was adopted as part of the Renewed Programme for Government agreed between the two coalition partners, the centre-right Fianna Fáil and the Green Party, after the latter voted to support it on Saturday.

The agreement specifies that the Government will "Declare the Republic of Ireland a GM-Free Zone, free from the cultivation of all GM plants". The official text also states "To optimise Ireland's competitive advantage as a GM-Free country, we will introduce a voluntary GM-free logo for use in all relevant product labeling and **advertising**, similar to a scheme recently introduced in Germany."

Michael O'Callaghan of GM-free Ireland said the policy signals a new dawn for Irish farmers and food producers:

"The Irish Government plan to ban GM crops and to provide a voluntary GM-free label for qualifying animal produce makes obvious business sense for our agri-food and eco-tourism sectors. Everyone knows that US and EU consumers, food brands and retailers want safe GM-free food, and Ireland is ideally positioned to deliver the safest, most credible GM-free food brand in Europe, if not the world."

In the USA, to which Ireland exports vast quantities of dairy produce (including milk powder and casein for cheese production), leading food manufacturers, retailers, processors, distributors, farmers, seed breeders and consumers have set up joint venture called the Non-GMO Project, which already provides GM-free labels for over 1,000 food products by individual manufacturers in addition to thousands of GM-free private retail brands.

Article continues: http://www.organicconsumers.org/articles/article_19360.cfm

- *GM-Free Ireland, Organic Consumers Association, More from this Affiliate, October 13, 2009*

▲ **World Food Day 2009: Fight Hunger through Investment in Farmers' Organizations**, October 16, 2009, Rome Italy

On this World Food Day 2009, with the theme **Achieving Food Security in Times of Crisis**, the International Federation of Agricultural Producers (IFAP), as part of the Farmers 'Fighting Poverty program,' calls upon governments and funding agencies for a major effort to invest in farmers' organizations in developing countries. The future of food security hangs in the balance. The 20 billion dollar agricultural investments promised by the G-8 could lead to global food security if farmers' organizations are the focus of the resources. The "Farmers Fighting Poverty" puts farmers in the driver's seat for agricultural development and poverty reduction. The Farmers Fighting Poverty program follows the [recommendations of IFAP to eliminate hunger and poverty](#).

Presidents from farmers' organizations in Canada, France, the Netherlands, Belgium and other countries have signed the statement "[Look again at how to tackle poverty.](#)" It calls upon governments upon governments for a major and increased effort to invest in farmers' organizations in developing countries. Farmers can double the world food availability to meet the needs of a growing world population of 9 billion people by 2050. This requires a long-term global action plan to increase agricultural output in an environmentally sustainable, economically feasible and socially responsible manner. The G-8 announcement to invest 20 billion dollars in agriculture worldwide must be made concrete and workable with the direct involvement of farmers.

"Farmers need direct access to such funding and they will create secure and sustainable food systems," said IFAP President Ajay Vashee. "If the money continues to go through a lot of intermediaries, we will no doubt find ourselves in the same cycle of food insecurity that has left more than a billion people hungry in 2009." Farmers will make sure investments are utilized effectively towards the development of vibrant agricultural sectors and rural economies through cooperative, entrepreneurial approaches that lead to long-term sustainability. Farmers' organizations at the national level with AgriCord and the IFAP at the international level stand ready to make development dollars work for the rural poor.

Contact Neil Sorensen, Communications Coordinator neil.sorensen@ifap.org, +33-627183727

Agroforestry Highlight



 Center for Agroforestry
University of Missouri-Columbia

Missouri University chestnut workshops cover entire growing season (from website <http://www.centerforagroforestry.org/pubs/news/news046.asp>)

COLUMBIA, Mo. - The University of Missouri Center for Agroforestry is offering a series of workshops on chestnut production in 2010. The four daylong workshops will span the chestnut growing season, from site selection and planting to harvesting and sales.

Each workshop will cost only \$10 thanks to support from the Missouri Department of Agriculture's Specialty Crop Block Grant program.

"Growing chestnuts is an excellent way to diversify your farm income," said Mike Gold, associate director of UMCA. "A well-managed one-acre orchard of 50 grafted Chinese chestnut trees can gross between \$5,000 and \$7,000 wholesale and about \$10,000 retail within 10-12 years."

The workshops, which will take place at the MU Horticulture and Agroforestry Research Center in New Franklin, are aimed at current and prospective growers, extension agents and students. Fees will be waived for FFA instructors and students.

Gold recommends that participants sign up for all four sessions, which will take attendees through the entire growing season.

Course dates and topics (all sessions are on a Tuesday):

- March 23: Site selection, planting, graft planning and pruning.
- May 4: Grafting.
- Aug. 17: Orchard maintenance, weed control, insect scouting, pest management and disease control.
- Sept. 14: Harvest, marketing and sales.

Instructors include Gold; Ken Hunt, research scientist; Mark Coggeshall, tree improvement specialist; and Michele Warmund, professor of plant sciences. Outside experts and veteran growers will also contribute.

Fees include course materials and lunch. Space is limited. To sign up, contact Julie Rhoads at 573-882-3234 or rhoadsj@missouri.edu. For workshop details, contact Michael Gold at 573-884-1448 or goldm@missouri.edu.

For more information about UMCA and Chinese chestnuts, see <http://www.centerforagroforestry.org>.

Michelle Hall
Senior Information Specialist
Center for Agroforestry University of Missouri
573-882-9866 hallmich@missouri.edu
Source: Michael Gold, 573-884-1448

VETIVER Highlight



Certainly, there are lots of new happenings about vetiver. Click <http://www.vetiver.com/> and learn what are new in that sphere.

NO-TILL Highlight

Lesser known benefits in no-till farming

Carlos Crovetto

No Tillage Development Centre, Concepcion, Chile

crovetto@entelchile.net

“There is nothing new to learn – only to better understand.”

No tillage is promoting a large change in the old paradigms, away from ancestral plowing, tilling the soil, burning straw and overgrazing. Today, the world has had many bad experiences with poor soil management in conventional agriculture. However, innovative no-till farmers around the world learning from their own experiences and working better with mother nature have stopped degrading the soil system by imitating how mother nature creates an organic, fertile and productive soil.

What is no-till farming? No-till farming is a complex management system that integrates natural processes and implements three key management strategies:

- I. Minimum soil disturbance
- II. Continuous crop residue cover
- III. Diverse crop rotations, and/or cover crops.

No-till farming encourages any issue focused on maintaining soil productivity and quality and its biodiversity in the context of sustainable agriculture.

Thus, a combination of the economic benefits of enhanced soil management through reduced labor requirements, time savings, reduced machinery and fuel savings with direct seeding, combined with the numerous environmental benefits has universal appeal. Indirect measures of social benefits as society enjoys a higher quality of life from environmental quality enhancement are difficult to quantify. No-till farming is a specific form of conservation agriculture (CA), working in harmony with nature using direct seeding techniques that increases soil C, can be of benefit to society and can be viewed as both “feeding and greening the world” for global sustainability.

I believe that the first lesson that these innovative farmers learned was to respect the soil, understanding that the soil is alive because it supports microorganisms and mesofauna vital to the production of an organic soil with a good soil structure that improves all natural parameters for more crop production with less cost and, most importantly, without soil erosion.

Many farmers today are beginning to understand many benefits provided by no tillage, however, there are a lot of unknown benefits that can improve the soil and make farmers more happy.

Some of these natural benefits of no tillage are described below.

1. Increases the microbial and mesofauna population in the soil which stimulates the life of microorganisms like nitrogen fixing Rhizobium bacterium in leguminous plants by symbiosis, by greater amount of adenosin triphosphate (ATP energy and soluble phosphate), provided by straw after decomposition on soil surface.
2. Stimulates microorganisms like azotobacter, azospirillum, green algae and other free living microorganisms, capable of fixing nitrogen in the soil.
3. Stimulates fungal life and important microorganisms in soil organic matter decomposition converting sugars into alcohol, which is perfect food for microorganisms that fix nitrogen for soil benefits.
4. Increases proliferation of endotrophic micorrhizal fungi hyphae. This symbiotic network extends the plant root system, enabling the plant to obtain greater amounts of phosphorus, zinc and water.

5. Minimizes phosphate fixation in the soil, thereby increases the activity of vital enzymes like phosphatase. On Chequen Farm in Chile over 30 years without any kind of tillage, we have a six-fold increase in phosphate available for plant use (7 ppm to 38 ppm) by returning an average of 5 t/acre/year of crop residues.
6. Increases activity of earthworms, insects and arthropods, in addition to producing organic compounds that enhance soil aeration and increases plant available water. These organic compounds should be considered irreplaceable because they act like a soil amendment and catalyser of vital physiological principles for plant life on the planet.
7. Increases in organic matter (soil carbon) improves the soil cation exchange capacity (CEC) especially those soils with inherently low CEC, e.g. soil with kaolinite clay minerals found at Chequen Farm.
8. Enhances soil carbon sequestration from the atmosphere through plant photosynthesis, carbon dioxide (CO₂) is captured to form plant biomass and grain. After grain harvest the straw is left on the soil surface with the roots in the soil as part of the natural carbon cycle.
9. Improves current global soil management because intensive tillage has been partially responsible for the increase of CO₂ in the atmosphere. The rapid oxidation of the carbon in straw by tillage and residue burning, are important contributing factors to the greenhouse effect affecting the planet's climate.

Summary

In order to receive these benefits, farmers should avoid any type of tillage or soil inversion on his property, and leave crop residues uniformly distributed over the soil surface. Diverse crop rotation (at least 3 years) is the third key to a successful no tillage system.

The present-day curricula of University Agronomy department teaching agricultural tillage systems are obsolete. To the majority of students, no tillage or soil improvement is not taught as a comprehensive system and in the best of cases, the students are taught minimum tillage, conservation tillage or conservation farming, which are of limited benefit because these tillage methods do not increase soil organic matter.

No one should doubt that the traditional farming and burning of crop residues are still very common around the world, and have left soils degraded. In many countries there is hunger because degraded soils no longer can produce enough food.

Today, productive soils must receive sufficient chemical fertilizers. However, this inorganic fertilizer does not guarantee the natural physical, chemical and biological integrity of the soil. *"The grain is for the man; the straw is for the soil,"* returning the straw is the cost to use the soil. We must feed the soil as well as we feed ourselves, the cows or hens or any living systems. Since the soil is a living system, we must speak about *soil nutrition*. The food for the soil is the straw (carbon and nutrients from fertilizers). *Life on our planet depends on soil management*. Our life and food security depend on improved soil management with no tillage through less intensive tillage, continuous soil residue cover and diverse crop rotations and/or cover crops.

LANDCARE Hightlight

We'd like to introduce you to the **Landcare Research of New Zealand** <http://www.landcareresearch.co.nz/>, the website of which has many interesting features. For example, the present one carries message on the beavers of the island of Tierra del Fuego in the southern tip of South America. The beavers have damaged large tracts of beach forests, as can be seen in the photo at right. The message continues:

"North American beavers were introduced to the island of Tierra del Fuego in 1946 to start a fur industry. However, the introduction has largely been a disaster with the beavers spreading large distances and even swimming the Straits of Magellan to mainland South America. They destroy riparian beech forests, damage roads and are a nuisance to farmers and foresters.



Beavers now occupy about 7 million ha of southern beech forest, Patagonian steppe and Andean high altitude bogs and in total about 26,000 km of waterways. Now, an international team led by John Parkes from Landcare Research has been asked to assess options to manage beavers and whether they could be eradicated from South America."

WOCAT Global Management Meeting

Start date: 15.02.2010

End date: 17.02.2010

Description: A WOCAT management meeting will be held from the 15th-17th February in Rome.

The global management team consisting of CDE, FAO and ISRIC and further invitees will discuss among others a strategy for scaling up of LADA/WOCAT (DESIRE) tools and methods and the form and date of the next WOCAT workshop in autumn 2010.

On Tuesday 16th February, an open LADA/WOCAT seminar is planned on 'LADA/WOCAT tools to address today's global challenges - potential applications for assessing land degradation and sustainable land management and for supporting decision making.

The morning of the seminar will provide an opportunity:

- to share the tools, experiences and potential applications of the LADA/WOCAT toolbox and of the networking already in place, and
- to hear from you of potential applications /adaptations for your programmes and opportunities for expanding the partnership process

In the afternoon it is planned to follow up with those interested to share information on projects/ideas for scaling up strategy. Suggestions could feed into LADA phase II.

Location: FAO (meeting organizer), Rome. More info in www.wocat.net, which has a new webpage.

LANDSLIDE – DEBRIS FLOW Highlight

[NOTE: Members interested in these issues are encouraged to attend the LANDCON 1004a meeting to take place in Taipei, Taiwan during April 26-30, 2010. See details in our monthly HOT NEWS <http://interprevent2010.nchu.edu.tw/>]

Analysis of the causes of the Guinsaugon landslide (posted since Wednesday, August 12, 2009 on the website <http://soil-environment.blogspot.com/>, operated by Prof Victor B. Asio of Visayas State University, Leyte, The Philippines victor.asio@daad-alumni.de. The article is reproduced here with thanks to the website operator.)



On 17 February 2006, a catastrophic landslide buried the village of Guinsaugon, the second largest village of St. Bernard town (Southern Leyte, Philippines) killing more than a thousand residents and displacing approximately 19,000 people. The landslide originated on an approximately 800 m high escarpment produced by the Philippine Fault that bisects Leyte and the major islands of the Philippines. In a recent article which synthesized the papers presented during an international conference in Leyte 2008 and published in the international journal Bulletin of Engineering Geology and the Environment, Guthrie and co-workers (2009) arrived at the following conclusions:

"The approximately 15 million m³ landslide was a result of progressive failures and tectonic weakening in a region made especially vulnerable by the inter-reaction of geological/tectonic, climatic and cultural factors. In southern Leyte, geology and tectonics (including historical seismicity, the progressive disintegration of the rock mass, the development of smectite layers and the continuous development and movement of shears within the Philippine Fault Zone) combine in steep rugged terrain to produce a series of massive landslides (10 million m³) of which the Guinsaugon event is the latest."

"The presence of rice paddies in the valley bottom had a major effect on the mobility of the rock avalanche, which increased the vulnerability of communities established to tend these fields. Having considered the available evidence, it is concluded that the landslide was not triggered by a seismic event that occurred several minutes afterward and that the recorded seismic signature was not a trace of the landslide itself. Rather, it is considered that the earthquake could be a result of tectonic unloading after the landslide occurred, or completely independent of the landslide event."



This satellite photo shows the extent of the landslide, the location of the barangay, & the unusual behavior of the stream

"The role of climate is, in some respects, similar to that of the seismic event. In terms of the trigger, the storm rainfall that occurred several days prior to the landslide undoubtedly raised pore water pressures in the source rock mass. However,

progressive failure relies less and less on pore water pressure as failure becomes imminent. The danger of relying on triggers to ascertain the probability of failure is exemplified by the Guinsaugon event; in the lag time between the end of the period of heavy rainfall and the occurrence of the rockslide-debris avalanche, evacuated residents had returned to their homes. Possible trigger mechanisms can be incidental to the landslide itself; however, the progressive development of a large failure often produces telltale signs that are observable by a community of non-experts."

Our own field investigations have shown two important aspects of the landslide not very well taken up in the report. The first is about the role of the thin layers of mudstone in between thick layers of sandstone/siltstones which could have served as lubricant for the landsliding process. The other is the great possibility that the Guinsaugon village developed on old landslide debris. This was clearly shown by the fact that the lower hills not affected by the recent landslide showed comparable materials as the landslide area. Also, the behaviour of the stream tells us a very important information.



It is very likely that the stream was covered by landslide debris in the past which is the reason why it changed its course and appeared to go around the community. Early settlers may have found the slightly elevated part of the area convenient to build their houses since it was elevated (and thus not prone to flooding) but without any idea that it was a landslide debris. The tragic landslide was waiting to happen. It was just a matter of time. Unfortunately, the people were not aware of this.

The role of the paddy fields as claimed by the paper needs more scientific investigation. I am not convinced that it played a major role considering the fact that the debris itself was already saturated with water. The clayey soil material from the hillside probably had more influence on the movement of the debris than the paddy soil.

Reference R. H. Guthrie, S. G. Evans, S. G. Catane, M. A. H. Zarco and R. M. Saturay Jr. 2009. The 17 February 2006 rock slide-debris avalanche at Guinsaugon Philippines: a synthesis. *Bulletin of Engineering Geology and the Environment* 68:201–213.

SUMMARY REPORTS

▲ THE 18th ISTRO CONFERENCE, Izmir, Turkey, June 15-19, 2009

The 18th Triennial 'International Soil and Tillage Research Organization' (ISTRO) Conference was held in Izmir, Turkey from 15-19 June 2009, in cooperation with John Deere as the main sponsor and several other sponsors. The venue was Sürmeli Hotels and Resorts, Efes Antik Şehir Plajı Kuşadası Yolu, 35920 Selçuk, İzmir, Turkey. The Conference was organized by Professor Dr Engin Çakir (Department of Agricultural Machinery, Faculty of Agriculture, Ege University, Izmir, Turkey). He was the then President of ISTRO. About 250 participants from 41 countries attended the Conference and there were about 100 oral and 75 poster presentations. The Conference comprised eight themes and a one-day technical excursion to Ege University. Pre- and post-conference tours were successfully completed, with 11 and four participants, respectively. The Conference also organized several business meetings.

There were four young researchers' scholarships to cover all costs of attending the Conference. Julia Krüemmelbein (from Germany) was selected to receive the 'Cees van Ouwerkerk Scholarship' for 2009. The three 'Low-Income Country' scholarship recipients were Sheng Li (a Chinese citizen, who is currently a Visiting Fellow with Agriculture and Agri-Food Canada), Ranjan Bhattacharyya (from India, currently a post-graduate student in Environmental Sciences at the University of Wolverhampton in the UK), and Mohammad Reza Mosaddeghi (from Iran, currently working in the Department of Soil Science, College of Agriculture at Bu-Ali Sina University in Hamadan, Iran).

The Conference organized many interesting themes including: conservation tillage, direct seeding and no-till applications, sustainable forest management, rehabilitation of degraded areas, soil compaction (causes, effects and control), soil dynamics and traction, soil management as a tool to reduce erosion, nutrient leaching and greenhouse gas emission, production of biofuel and soil biological quality and health. The keynote lectures addressed: tillage and soil ecology as partners for sustainable agriculture, sustainable issues with field traffic, modelling soil-machine interactions and soil pore space under pressure. Conference delegates assembled to share their research experiences in: conservation tillage effects on soil organic carbon sequestration, characterizing soil degradation, measuring responses to improved soil management practices, assessing the value of conservation tillage, management practices to achieve greater sustainability and describing interrelationships among soil, water, air and ecosystems. Delegates agreed that conservation management

practices are helpful in preserving and improving soil quality around the world by decreasing water erosion and compaction by soil traffic, by increasing C-sequestration and improving soil biological activity. A special challenge for this conference was to keep momentum in the development of soil protection by conservation tillage, including the establishment of legal instruments. ISTRO members are actively working on dissemination of this knowledge to farmers and practitioners. (The main source of this report is <https://www.istro2009.org/index.php>)



▲ 7th International No-Till Conservation Agriculture Conference, Dnipropetrovsk, Ukraine, June 23 – 26, 2009

The Seventh International No-Till Conservation Agriculture Conference in Ukraine: **Sustainable Agriculture Based on Systems Approach**, was held in Dnipropetrovsk, Ukraine from June 23-26, 2009. Like the previous six conferences since 2004, Agro-Soyuz Corporation (<http://www.aginukraine.com/AgroSoyuz/agro02.htm>) was the organizer. Agro-Soyuz Corporation is a private joint stock Ukrainian company formed in 1991 and serving as a model agricultural enterprise with some 19,000 ha of Chernozem soils where state of the art technologies in crops, dairy, swine and grain processing and storage are introduced and exposed to ongoing research and evaluation by both staff and invited guests. The latter include farmers, research scientists, extension advisors, academics, policy-makers, government officials, politicians, and private sector stakeholders. The Conference was attended by a total number of some 125 participants from Ukraine, Russia, Moldova, Turkey, Kazakhstan, USA, Canada, Brazil, Argentina, New Zealand, China, ECAF (Germany) and FAO. Ms. Nila Martyniuk (nila@agro.dp.ua) of Agro-Soyuz Corporation gave the following details.

During the four days of the Conference speakers from nine countries (Germany, Italy, Canada, USA, Brazil, Argentina, China, New Zealand and Ukraine) presented their views on the benefits of a No-Till Systems Approach to agricultural practice. Constraints and their possible solutions were also addressed.

According to **Volodymyr Khorishko**, the Co-Director of Corporation “Agro-Soyuz”, the global food crisis is the result of a discord between food price and cost of production, and consequently a discord between the producer and the consumer. Reduction of production costs will allow for reduction of prices for food. This is possible only through technological changes in current agricultural production systems. It is through teamwork involving producers in Ukraine, suppliers and the Government of Ukraine that Conservation Agriculture can become the basis of agro-technological policy of Ukraine.

The Minister of Agrarian Policy of Ukraine, Yuriy Melnyk, stated as follows:

- Today at this Conference there are people who represent different sectors of agriculture: growers, who implement technologies; speakers, who promote those technologies and can assist in implementing them; scientists, who develop those technologies, and professors from agricultural universities, who explain how to make it all work. There are also our friends and colleagues from many countries of the world. We all have come to Agro-Soyuz today not only to listen, but also to share practical experience in the development of agriculture in the world, in order to make agriculture of Ukraine more efficient and sustainable. Today food and agriculture production requires such technology, which can offer new opportunities in agriculture, making it more competitive in terms of production costs, instead of relying on subsidies. *It is said that the winner is not the one who invented the technology but the one who has implemented it.*

Prime Minister of Ukraine, Yuliya Timoshenko stated:

Dear guests and participants of the conference,

Let me sincerely greet you during your participation at the 7th International Conference on Sustainable Agriculture based on a Systems Approach to No-Till. I hope that this important event will bring you one step closer to new approaches to organization of agricultural business – modern, highly profitable, energy saving – since representatives of such countries as USA, Brazil, Argentina, Germany, Canada, Italy, China and New Zealand are going to share their experience in efficient agricultural management. I'm sure that during the conference there will be a productive discussion of the experience gained in Ukraine and beyond in implementation of agrarian technologies in crop production. I believe in a great future for Ukrainian agriculture. Wish you successful work!



From left: All Ukrainian Field Day, July 23, 2009 (all equipment shown are for direct seeding); Key participants at the All Ukrainian Field Day, July 23, 2009: Yuriy Melnyk, Ukrainian Minister for Agrarian Policy is handing the sheaf of wheat to Julia Timoshenko the Prime Minister of Ukraine. In the background are the two co-Directors of Agro-Soyuz, Sergey Prokayev and Volodymyr Khorishko (hidden by Minister Melnyk); Prime Minister Julia Timoshenko looking at the DEMO of direct seeders.

Following are excerpts from the presentations/discussions of foreign experts:

Yana Epperlein (Germany), Crop Production Department of Humbolt University, Berlin and President, European Conservation Agriculture Federation (ECAAF)

– Tillage is culturally established in our heads, but realization among farmers, politicians and society of the fact that **soil is not a renewable resource** can result in gradual change in the approaches to soil protection. Adoption of **Soils Framework Directive in Europe** is considered to be an important step on the way to acceptance of CA as economically and environmentally efficient production practice. It is expected that this development will increase the level of adoption of CA around Europe.

Amir Kassam (Italy), Plant Production and Protection Division, Food and Agriculture Organization of the United Nations, Rome

– Globally there are more than 100 million ha of arable land under CA. However, CA is not being promoted in any serious manner in Europe despite the associated large economic and environmental benefits. In Ukraine, where the interest in applying CA technologies and practices is increasing and where efforts are being made to transform the tillage-based production systems into CA systems, it is necessary to insure strong policy and institutional support to accelerate the modification of agricultural practices.

Ivo Mello (Brazil), President of American Confederation of Farmers' Associations, and Rio Grande do Sul University Council Member

– The economies of our countries grow due to agribusiness development. During the last 20 years agricultural production has balanced our external trade. It is agricultural production that has made us an important player on the world market of meat and grain. And I am sure that at least an important part of this economical improvement results from profitability increase due to no-till implementation.

Ronaldo Kuhlmann (Argentina), Member of the AAPRESID Board and the AAPRESID International Committee (Argentinean No-Till Association)

– CA is an alternative way of production, which makes it possible to maintain yields and decrease costs, reducing adverse effects on environment, and especially soils. It means that with current knowledge of no-till it is a real and acceptable alternative, which proved to be more ecologically friendly than conventional agriculture systems. But no-till alone is not enough to develop productive and sustainable agriculture. No-till must be used in combination with crop rotation, integrated pest management, weed and disease control, improvement of soil fertility and efficient use of inputs.

Li Hongwen (China), Professor of Agricultural University of China, Researcher, and Professor of Shandong Polytechnic University

– The government of our country pays a great attention to the implementation of CA programs, and most documents of the Central Committee include distinct requirements as to the growth of dynamics of implementation of these programs, and stimulation of further development of agriculture. In addition, agricultural development must provide support to political progress, improve management, increase investments, be a role model, and promote education. The most important strategy for promoting CA is to develop and produce good machines for no-till operations, without which no-till system will lose its technology carrier.

Robert Blackshaw, Canada

– With the argument that no-till is suitable only to some soils and not for the others, I keep hearing it for a long time. I just want to give one example. We have lands that haven't been plowed for 70 years. Naturally, soil can be productive without any tillage, and **it's time to stop such argument**. Essentially, tillage is not needed. If we speak in terms of soils, our soils in Canada are very similar to your soils here. When I was walking you fields I had a feeling like I was back in Canada. That is why I think that almost all your lands can be farmed with no-till. All crops can be grown under no-till. But here we have to make a distinction: when you till a land for many years a

plow pan is formed at a depth of about 20 cm. That is why it takes time to eliminate this layer. This hard layer can be broken naturally under no-till over 2-3 year period by growing forage crops and tap-rooted crops, and after 5-7 years most crops can be successfully grown under no-till.

Following are opinions expressed by other participants

Anatoliy Balaev, Head of the Department of Soil Science and Soil Conservation of the National Resource and Environmental Management University (Kiev)

– I am a supporter of the resource saving technology, which at this conference is called **conservation technology**, meaning that its main goal is to conserve soil and protect it from fertility loss and different degradation processes. Our department was among the early initiators of this movement together with Volodymyr Khorishko. At that time when in Poltava region a CA campaign was initiated, Agro-Soyuz also took it up. But at Soviet times there was not much economical precondition for implementation of this system - it used to be applied only for wind erosion control. But now CA system is a core of new advanced commercial technologies. To participate in such conferences it is a great opportunity to talk to scientists and growers, to learn current situation in agricultural sphere. It should be mentioned that at this conference much attention was given to the discussion of the issues concerning the technology of both crop production and soil conservation. Now, more and more people understand the importance of soils as the main resource of agriculture and do everything possible to protect them.

Viktor Korchin, a Ukrainian farm operator

– I was involved in the dust storm in 2007. In Kherson region, Berislavsk district I am the only farmer, practicing no-till, other farmers were still plowing. There were two 260 ha fields bordering my farm. One day the eastern wind was blowing. The air was clear over my field, but on his field I could not see even the end of the hood because of the dust. I even 'benefited' from this dust storm as a lot of soil was carried to my field. So I believe that the solution to our dust storm problems and erosion is no-till.

Timur Daniyarov, Agros Company, Kostanay Region, Khazakhstan

– Our farm has 2,500 ha of cropland; the crop rotation includes wheat and barley. We stopped using moldboard plow since 2001. Last year we started direct seeding on 50% of our lands and the other 50% were under minimum till. When we compared the yields we saw that under minimum tillage we got 1.8 t/ha while under no-till, 2.7 t/ha. This year we increased the ratio to 70/30 and next year we will eliminate minimum-till completely. Regarding the economic benefits of zero tillage, our fuel costs reduced to 25% of what they were previously, corresponding to a saving of US\$25,000 a year. The new technology also made it possible to reduce labor costs: 3 years ago we had 8-9 operators and 6 mechanics, now we have only 4 operators and 2 mechanics. We are at Agro-Soyuz Conference for the first time. We come here to see Horsch/Agro-Soyuz Seeder and to learn more about the technology; we are really impressed.

From **Nila Martyniuk** nila@agro.dp.ua, Agro-Soyuz Corporation, Majske Village, Dnipropetrovsk, Ukraine. Phone: +38 050 362.4469

▲ Challenges and Opportunities of Bioindustrial Watershed Development for Prosperity of Farming Community, Bangaluru, India, June 25-27, 2009 [LANDCON 0906b]



The National Conference of Soil Conservation Society of India held at Bangaluru from 25-27 June 2009 at GKVK Campus, Bangaluru, Karnataka, India on the theme "Challenges and Opportunities of Bioindustrial Watershed Development for Prosperity of Farming Community". Sri Ravindranath, Hon'ble Minister for Agriculture, Government of Karnataka inaugurated the conference.

Dr. G. Madhavan Nair, Chairman, ISRO & Secretary, Department of Space, in his keynote address appreciated the efforts of the steering and organizing committees for having arranged a befitting conference. He narrated the utilities of space inputs in watershed development programme and also highlighted that the thematic maps have been derived using satellite technology for the themes of land use/ land cover, soil resources, hydro geomorphology, drainage map, slope, etc. and integrated into village resource centre and linked it to V-Sat. These are available free of cost for entire state, which can be integrated in the planning system. There were 7 technical sessions held during the course of the conference and all the speakers and the dignitaries expressed the need for inculcating the spirit of the



seven technical sessions for effective implementation of watershed related activities inclusive of Bioindustrial activities for sustainable development of rainfed areas.

Prof. J.S. Bali, Chief Patron, SCSI presented the summary of recommendations of all the technical sessions.

1. Bio-industrial Watershed Management has the potential of ushering in a Bio-industrial Revolution in the Rural Areas, eradicating poverty, processing component may, therefore, be added to all the current watershed programmes and existing guidelines may be suitably amended to enable the change.
2. Existing Watershed Organization in the States may be reorganized in order to establish a strong Department of Bioindustrial Watershed Management, to make Bioindustrial Rural Revolution, a reality.
3. Bioindustrial Watershed Management would require close co-ordination between the Ministers of Rural Development, Agriculture and Food Processing Industries. A Bioindustrial Watershed Management Council may, therefore, be set up bringing all the concerned Ministries together.
4. In order to undertake research and for training of the rural entrepreneurs, a Bioindustrial Watershed Research and Training Institute may be established.
5. Each watershed should become a bioindustrial watershed, says Prof. M.S. Swaminathan. Within the watershed each village may become a Bioindustrial Village under the active involvement of the Panchayat Raj Institutions.
6. Credit and Insurance cover for the crop and stored produce is essential for the success of the Bio-industrial Watershed Management Movement.
7. State Governments may like to institute Bio-industrial Management Study in order to discover their potential and the best means to realize it. U.P. has already done it.
8. Government may like to institute a multi-source Bioindustrial Management Fund to usher in the Bioindustrial Revolution in the country within a short period, and get rid of the rural poverty forever.



Marketing is crucial for the success of the Bioindustrial Watershed Movement. Existing marketing structure may, therefore, be reviewed to make it more effective in bringing bulk of the profits of processing to the primary growers.

- Suraj Bhan, President (soilcsi@yahoo.co.in) and Sanjay Arora, Councillor, SCSI, New Delhi

▲ International SWAT Conference held in Boulder, August 5-7, 2009

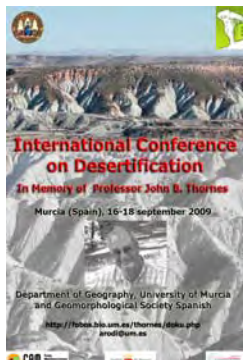


The 2009 International SWAT Conference was held Aug. 5-7 at the University of Colorado at Boulder and drew more than 160 attendees from 16 countries. SWAT, the Soil and Water Assessment Tool, is a public domain model jointly developed by USDA Agricultural Research Service and The Texas A&M University System.

Conference presentations included SWAT development and application; large-scale assessment; landscape processes; GIS interfaces and databases; climate change; new developments and auto-calibration and uncertainty analysis. About 135 papers were presented and recorded. Presentations, the book of abstracts, and more information about the conference and upcoming regional SWAT conferences are all available on the conference Website <http://www.brc.tamus.edu/swat/index.html>. Conference proceedings will also be posted soon.

SWAT is a river basin-scale model used to simulate the quality and quantity of surface and groundwater and predict the environmental impact of land management practices on different soil patterns and land use patterns. SWAT is widely used in soil erosion prevention and control, non-point source pollution control and regional management in watersheds.

▲ **International Conference on Desertification in memory of Professor John B. Thornes, Murcia, Spain, September 16-18, 2009 [LANDCON 0909]**



The main objectives of the conference were two: i) to be a forum where several researchers from different countries to discuss different aspects of desertification in order to update knowledge and propose actions or follow-up action on priority research. ii) to pay tribute to the figure of Professor John B. Thornes, who died in July 2008, who dedicated most of his life to the study of desertification processes, being a pioneer on field instrumentation and process modeling. His research was not only developed in the Mediterranean Europe, but also in South America, South Africa and China.



Professor Thornes (1940-2008), professor of Physical Geography and head of the Geography Department at King's College, University of London, was an exceptional researcher and Physical Geographer. He had a very special relationship with Spain throughout his life. In 1967 he developed his PhD Thesis in the Upper Duero and since then he carried out numerous researches and projects, especially in the Mediterranean area. Several institutions and universities from different countries have distinguished him with honours, including scientific societies, universities and research centres in Spain. So in 1998 the Spanish Geomorphology Society named him "Honor member" and in 2006 the University of Murcia also named him "Doctor Honoris Causa".

The theme of the conference and the figure of Professor Thornes attracted scientists from various countries around the world (Spain, Belgium, France, Greece, Holland, Hungary, India, Iran, Israel, Italy, Mexico, Portugal, United Kingdom, Romania and Sierra Leone). The conference was well received by the international scientific community, a good evidence of this is the 161 contributions submitted, 42 were presented in oral mode and 119 in poster format.

The conference was organized by the Area of Physical Geography at the University of Murcia and the Spanish Geomorphology Society. It was sponsored by several institutions: University of Murcia, Seneca Foundation, Euro-Mediterranean Water Institute, Ministry of Regional Policy of the Autonomous Community of Murcia, Municipality of Murcia and Tragsa Group. And there have been numerous collaborating organizations:

European Society for Soil Conservation (ESSC), Spanish Society of Soil Science (SECS), European Network for Research on Desertification (DESERNET), World Association of Soil and Water Conservation (WASWC) and the Commission for land degradation and desertification (COMLAND).



The invited presentations were made by well reputed researchers who were personal friends of Professor Thornes as well. Professors Mike Kirkby, Anton Imeson, Jose Maria Garcia Ruiz and Juan Puigdefábregas. Professor Kirkby, University of Leeds (UK), gave a presentation titled "*Desertification: The broader context*". Professor Imeson, University of Amsterdam (The Netherlands), titled his lecture "*Responding to soil erosion in Spain: From Charles Darwin to John Thornes*". Professor Garcia-Ruiz, Pyrenean Institute of Ecology (CSIC, Zaragoza), talked about "*Methods and scales in soil erosion studies in Spain: Problems and perspectives*". Finally, Professor Puigdefábregas, Arid Zone Experimental Station (CSIC, Almería), titled his lecture "*An ecosystemic approach to land degradation assessment and its application to the Iberian Peninsula*".



Simultaneous translation was provided during the scientific sessions that were also recorded and broadcasted live over the Internet through the website of the University of Murcia. The conference ended with a field trip to



the Mula and Guadalentín basins.

The Faculty of Arts and the University of Murcia wanted to show its appreciation to Rosemary Thornes, widow of Professor Thornes, and in the closing dinner the Rector of the University of Murcia gave her a commemorative plaque. (Photo above shows Mrs Thornes, left, and Prof Asunción Romero Díaz.)



Contributions to the conference have been published in a book by Editum (University of Murcia), with the title "*Advances in Studies on Desertification*", edited by A. Romero Díaz, F. Belmonte Serrato, F. Alonso Sarria and F. López Bermúdez. This book is also available at the web site of the University of Murcia (<http://congresos.um.es/icod>). Another book, whose authors are A. Romero Díaz and F. López Bermúdez, entitled "*Erosion and Desertification in Neogene-Quaternary basins of the Murcia Region*" is the scientific field trip guide and has been published by the Euro-Mediterranean Water Institute.

The Spanish journal "Quaternary and Geomorphology" is to publish a special issue with some of the contributions submitted to the conference. Possibly an international journal is also going to publish another special issue.

More information is available at the web site of the conference <http://fobos.bio.um.es/thornes/doku.php>. Several conference photos are available at <http://fobos.bio.um.es/thornes/doku.php?id=fotos>.

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▲ ISSAAS-Philippines held 1st ISSAAS Bicol Regional Conference, September 17, 2009

The International Society for Southeast Asian Agricultural Sciences-Philippines organized the 1st ISSAAS Bicol Regional Conference in collaboration with Bicol University (BU) in September 17, 2009 at BU College of Science Auditorium. The theme for the conference was "**Securing Food for Today and the Future**".

The conference was attended by 119 delegates from University of the Philippines Los Baños (UPLB), Bicol University (BU), Bicol College (BC), Camarines Norte State College (CNSC), Camarines Sur State Agricultural College (CSSAC), Catanduanes State College (CSC), Partido State University (PSU), Sorsogon State College (SSC), Department of Agriculture (DA), Department of Education (DepEd), and Department of Environment and Natural Resources (DENR). Thirty-eight research papers were presented in five simultaneous sessions. These papers addressed the following thematic areas: Climate Change and Food Production (6 papers); Food Supply, Nutrition, and Population (8); Food Security and Biodiversity (10); Food Safety and Food Technology (9); and Food Supply Chain Efficiency and Responsiveness (5). The five sessions were facilitated by the personnel of BU which include Mr. Nestor W. Dullesco, Mr. Angelo P. Candelaria, Prof. Corazon V. Caputan, Ms. Ida Francia H. Revale and Mr. Michael Montealegre. Six posters were also presented in the conference.

Dr. Roberto F. Rañola, Jr., the Vice-President for ISSAAS-Philippines introduced the organization and the Philippine Association of Agriculturists (PAA) to the delegates. He elaborated the main objective of ISSAAS which is "to encourage the holistic approach to problems and to promote the progress and development of science and technology through research and publication, and the outcome is to be for regional agricultural development".

The first plenary speaker was Dr. Rogelio N. Concepcion, the former Director of the Bureau of Soils and Water Management (BSWM) and currently a consultant of the Water and Sanitation Coordination Office of the National Anti-Poverty Commission. His plenary address was entitled "Climate Change and Food Security". He tackled the specific issues on each of the six thematic areas of the conference and posted challenge to the researchers to pursue studies on these identified issues. Dr. Pricilla C. Sanchez, a retired professor at the Institute of Food Science and Technology (now Food Science Cluster) at UPLB delivered the second plenary address entitled "Food Safety in the Philippines: Challenges and Strategies".

The conference was followed by the induction of the 70 new members of ISSAAS-Philippines. ISSAAS-Philippines is planning to hold the 10th ISSAAS Philippine National Convention and Annual Meeting in the Bicol Region in 2010. (EET) <http://www.issaas.org/news/2009/17Sep.html>

▲ SUITMA CONFERENCE 2009 ends in New York City, September 20-25, 2009

On behalf of Rich, Lindsay and myself, I would like to thank all the participants of last week's conference in New York City. We really enjoyed meeting and visiting with everyone. The presentations and posters were superb, and the good spirit of the group made our duties as planners a pleasure.

This should be the last of the SUITMA5-related email correspondence (please hold the applause) and as a wrap-up I'd like to let everyone know that pdf copies of the oral and poster abstracts are now online, and available

through the following pages: <http://www.nycswcd.net/suitma-2009/agenda.html>, <http://www.nycswcd.net/suitma-2009/posters.html>.

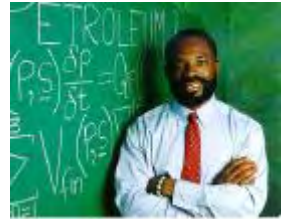
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MISCELLANEOUS

▲ **Ideas, Not Money, Alleviate Poverty** from *Science Development Bulletin* 090116 (reproduced here with thanks)

By Philip Emeagwali

I once believed that capital was another word for money, the accumulated wealth of a country or its people. Surely, I thought, wealth is determined by the money or property in one's possession. Then I saw a Deutsche Bank advertisement in the Wall Street Journal that proclaimed: "**Ideas are capital. The rest is just money.**" I was struck by the simplicity of such an eloquent and forceful idea. I started imagining what such power meant for Africa. The potential for progress and poverty alleviation in Africa relies on capital generated from the power within our minds, not from our ability to pick minerals from the ground or seek debt relief and foreign assistance.



If ideas are capital, why is Africa investing more on things than on information, and more on the military than on education? Suddenly, I realized what this idea could mean for Africa. If the pen is mightier than the sword, why does a general earn more than the work of a hundred writers combined? If ideas are indeed capital, then Africa should stem its brain drain and promote the African Renaissance, which will lead to the rebirth of the continent. After all, a renaissance is a rebirth of ideas. And knowledge and ideas are the engines that drive economic growth.

When African men and women of ideas, who will give birth to new ideas, have fled to Europe and the United States, then the so-called African Renaissance cannot occur in Africa. It can only occur in Paris, London and New York. There are more Soukous musicians in Paris than in Kinshasa; more African professional soccer players in Europe than in Africa. African literature is more at home abroad than it is in Africa. In other words, Africans in Europe are alleviating poverty in Europe, not in Africa. Until the men and women of ideas — the true healers of Africa — start returning home, the African Renaissance and poverty alleviation will remain empty slogans. After all, the brightest ideas are generated and harnessed by men of ideas.

The first annual report by J.P. Morgan Chase, a firm with assets of 1.3 trillion dollars, reads: "The power of intellectual capital is the ability to breed ideas that ignite value." This quote is a clarion call to African leaders to shift purposefully and deliberately from a focus on things to a focus on information; from exporting natural resources to exporting knowledge and ideas; and from being a consumer of technology to becoming a producer of technology.

For Africa, poverty will be reduced when intellectual capital is increased and leveraged to export knowledge and ideas. Africa's primary strategy for poverty alleviation is to gain debt relief, foreign assistance, and investments from western nations. Poverty alleviation means looking beyond 100 percent literacy and aiming for 100 percent numeracy, the prerequisite for increasing our technological intellectual capital. Yet, in this age of information and globalization when poverty alleviation should result in producing valuable products for the global market and competing with Asia, the United States, and Europe — shamefully, diamonds found in Africa are polished in Europe and re-sold to Africans.

The intellectual capital needed to produce products and services will lead to the path of poverty alleviation. Intellectual capital, defined as the collective knowledge of the people, increases productivity. The latter — by driving economic growth — alleviates poverty, always and everywhere, even in Africa. Productivity is the engine that drives global economic growth. Those who create new knowledge are producing wealth, while those who consume it are producing poverty. If you attend a Wole Soyinka's production of Chinua Achebe's "Things Fall Apart," you consume the knowledge produced by Soyinka and Achebe as well as the actor's production, much like I consume the knowledge and production of Bob Marley's through his songs.

We will need wisdom, that which turns too much information — or information overload — into focused power, not only to process, but also to evaluate the overwhelming amount of information available on the Internet. This wisdom will give us the competitive edge and enable us to find creative solutions.

The following story illustrates the difference between information and wisdom. Twelve hundred years ago, in the city of Baghdad, lived a genius named Al-Khwarizmi, who was one of the fathers of algebra. In fact, the word algebra comes from the title of his book Al-jabr, which for centuries was the standard mathematics textbook. Al-Khwarizmi taught in an institution of learning called the House of Wisdom, which was the center of new ideas

during Islam's golden age of science. To this day we computer scientists honor Al-Khwarizmi when we use the word algorithm, which is our attempt to pronounce his name.

One day, Al-Khwarizmi was riding a camel laden down with algebraic manuscripts to the holy city of Mecca. He saw three young men crying at an oasis. "My children, why are you crying?" he enquired. "Our father, upon his death, instructed us to divide his 17 camels as follows: 'To my oldest son I leave half of my camels, my second son shall have one-third of my camels, and my youngest son is to have one-ninth of my camels.'" "What, then, is your problem?" Al-Khwarizmi asked. "We have been to school and learned that 17 is a prime number that is, divisible only by one and itself and cannot be divided by two or three or nine. Since we love our camels, we cannot divide them exactly," they answered. Al-Khwarizmi thought for a while and asked, "Will it help if I offer my camel and make the total 18?"

"No, no, no," they cried. "You are on your way to Mecca, and you need your camel." "Go ahead, have my camel, and divide the 18 camels amongst yourselves," he said, smiling. So the eldest took one-half of 18 — or nine camels. The second took one-third of 18 — or six camels. The youngest took one-ninth of 18 — or two camels. After the division, one camel was left: Al-Khwarizmi's camel, as the total number of camels divided among the sons (nine plus six plus two) equaled 17.

Then Al-Khwarizmi asked, "Now, can I have my camel back?" These young men had information about prime numbers, but they lacked the wisdom to use the information effectively. It is the manipulation of information to accomplish seemingly impossible purposes that defines true wisdom.

Today, we have ten billion pages of information posted on the Internet — more than enough to keep us busy the rest of our lives, and new information is being added daily. More information has been created in the last 100 years than in all of the previous 100,000 years combined. We need the wisdom to sift through and convert these billions of pages into information riches.

The genius of Al-Khwarizmi was not in his mathematical wizardry or even his book knowledge: It was in his experiential knowledge — his big-picture, right-brain thinking; creativity; innovation; and wisdom. It was his wisdom to add a camel to make the total 18 and still get his camel back. Prime numbers are to whole numbers what the laws of physics are to physics. Twenty years ago, I used an Al-Khwarizmi approach to solve a notoriously difficult problem in physics. I added inertial force, which enabled me to reformulate Newton's Second Law of Motion first as 18 equations and algorithms, and then as 24 million algebraic equations. Finally, I programmed 65,000 "electronic brains" called processors to work as one to solve those 24 million equations at a speed of 3.1 billion calculations per second. Like Al-Khwarizmi, I derived my 18 equations through out-of-the-box thinking in an in-the-box world, adding my metaphorical camel: inertial force. In other words, I applied wisdom to known knowledge to generate intellectual capital.

Unless Africa significantly increases its intellectual capital, the continent will remain irrelevant in the 21st century and even beyond. Africa needs innovators, producers of knowledge, and wise men and women who can discover, propose, and then implement progressive ideas. Africa's fate lies in the hands of Africans and the solution to poverty must come from its people. The future that lies ahead of Africa is for Africa to create, after the people have outlined their vision. We owe it to our children to build a firm foundation to enable them go places we only dreamt. For Africa to take center stage in today's economic world, we have to go out and compete on a global basis. There is simply no other way to succeed.

Transcribed from a lecture delivered by Philip Emeagwali at the University of Alberta, Canada. Philip Emeagwali has been called "a father of the Internet" by CNN and TIME; extolled as "one of the great minds of the Information Age" by former US president Bill Clinton; and voted history's greatest scientist of African descent by New African. He won the 1989 Gordon Bell Prize, the Nobel Prize of supercomputing. Source: www.en.wikipedia.org

SCIENCE FOR EVERYONE

The Moon – Getting to know your neighbour Dave Canavan

The moon is Earth's only natural satellite and without it, life as we know it would not exist. It has also been in the news recently as on the 21st of October 2008, India launched its very first rocket, sending the Chandrayaan satellite into space to orbit the moon.

It is an unmanned mission that is scheduled to last for two years which will map the moon's surface to look for natural resources, especially for an isotope of Helium which may provide an alternative energy source for Earth.

Where did the moon come from?



Interestingly, the moon used to be a part of the Earth. There are many theories to explain the formation of the moon, but the most plausible and widely accepted is the **giant impact** theory. This poses that about 4.45 billion years ago (about 50 million years after the Earth and the rest of the solar system formed) the young Earth was struck by a massive object.

Approximately the size of Mars, it collided with the Earth which threw debris from the **mantle** (the molten layer under the crust) and crust into space where it coalesced and formed the solid mass we know as the moon with the resultant debris merging with the Earth.

This explains why the rocks that make up the moon have a similar composition to that of the Earth's mantle.

The dark side of the moon

The infamous 'dark side of the moon' is somewhat of a misnomer. Granted, it is a side of the moon we never see (or at least very much of), but it certainly sees the Sun and therefore is not always in darkness. It is as dark for the same amount of time as the side we see, just as it is light for the same amount of time.

The moon rotates around the Earth once every 29.5 days. It also spins on its axis once every 29.5 days, therefore we see only one face of the moon all of the time, give or take a little either side. This is why the 'dark side' name arose, but when we have a **new moon** (where the sun isn't shining on the surface we can see) the 'dark side' is bathed in sunlight, which is why the term 'far side' is now used.

It is also worth mentioning here that the moon is not its own source of light like the sun. It merely reflects the sun's light, meaning we only see certain parts of the moon, and at most only ever half of it. The reason it is by far the brightest object in the night sky is because it is the closest celestial body to us, and therefore reflects more light than any and all of the stars emit, from the viewer's perspective.

The phases of the moon

How we see the moon is different every night throughout the course of a month. It is either going from a full moon to a new moon, which is known as **waning**, or is going from a new moon to a full moon which is known as **waxing**.

Throughout these waxing and waning periods the moon appears in 8 different phases. When waxing, from a **new moon**, the moon then appears as a **crescent** moon, arguably the most famous way we imagine the moon.

The crescent then becomes a **quarter** moon which we often refer to as a half moon. We do this as it is half of the full moon, which is of course only half of the total moon. Therefore, the half of the half we see is actually a quarter.

The next phase is the waxing **gibbous** moon where we see three quarters of the full moon. That, of course, is followed by a **full moon**, where the moon appears at its biggest and brightest, and where people apparently go mad, hence the term **lunatic** from the Latin name for the moon: **Luna**. There is however, no real evidence for this.

From the full moon it then becomes a waning gibbous moon, followed again by a quarter moon, shrinking to a crescent moon before the phases begin again from a new moon. As the moon goes through these phases over a 29.5 day period, you very occasionally get two full moons in the same month, and we call this a **blue moon**, hence the saying: "Once in a blue moon".

High tide, low tide

Every day the Earth experiences changes in the level of the oceans which we call tides. There are two high tides and two low tides every day at about 6 hours apart between high and low. The tides are mainly caused by the gravitational pull of the moon, but they are also influenced by the sun's gravity.

The moon pulls on the Earth which causes the oceans to bulge at the side facing the moon causing a high tide. Due to the Earth rotating approximately every 24 hours, we experience high tides about 12 hours apart, as we do low tides.

When the sun, Earth and moon are aligned in this order the Earth experiences extremely high tides known as **spring tides**, whereas when the moon is perpendicular to the Earth and sun we experience smaller **neap tides**.

Gravity, craters and the sea

The moon, being much smaller than the Earth, has a much weaker gravitational force: about one-sixth that of the Earth. This is why when you see footage of the moon walks, the astronauts are all bouncing around. What fun that must be, to weigh so little!

The moon's gravity has been large enough to attract wayward meteorites in the past, with its many craters showing the scars of numerous collisions. As there is no atmosphere unlike here on Earth, the craters are not eroded and so are permanent reminders as to the dangers of space although they do add to the moon's beauty.



Parts of the moon's craters and scars are beautifully named, with my favourite being the 'sea of tranquility'. Who knows, with all of the advancements in technology, maybe I'll even get to visit there myself.

Dave Canavan has an MSc in Behavioural Ecology and is the Head of Secondary at Garden International School. Dave is fascinated by science and loves animals, especially the dangerous kind! You may contact Dave at davidc@gardenbangkok.com

MEDICAL SCIENCE for your health

AFTER YEARS OF TELLING PEOPLE CHEMOTHERAPY IS THE ONLY WAY TO TRY AND ELIMINATE CANCER, JOHNS HOPKINS IS FINALLY STARTING TO TELL YOU THERE IS AN ALTERNATIVE WAY.

Cancer Update from Johns Hopkins University:

1. Every person has cancer cells in the body. These cancer cells do not show up in the standard tests until they have multiplied to a few billion. When doctors tell cancer patients that there are no more cancer cells in their bodies after treatment, it just means the tests are unable to detect the cancer cells because they have not reached the detectable size.
2. Cancer cells occur between 6 to more than 10 times in a person's lifetime.
3. When the person's immune system is strong the cancer cells will be destroyed and prevented from multiplying and forming tumors.
4. When a person has cancer it indicates the person has multiple nutritional deficiencies. These could be due to genetic, environmental, food and lifestyle factors.
5. To overcome the multiple nutritional deficiencies, changing diet and including supplements will strengthen the immune system.
6. Chemotherapy involves poisoning the rapidly-growing cancer cells and also destroys rapidly-growing healthy cells in the bone marrow, gastro-intestinal tract etc., and can cause organ damage, like liver, kidneys, heart, lungs etc.
7. Radiation while destroying cancer cells also burns, scars and damages healthy cells, tissues and organs.
8. Initial treatment with chemotherapy and radiation will often reduce tumor size. However, prolonged use of chemotherapy and radiation do not result in more tumor destruction.
9. When the body has too much toxic burden from chemotherapy and radiation the immune system is either compromised or destroyed, hence the person can succumb to various kinds of infections and complications.
10. Chemotherapy and radiation can cause cancer cells to mutate and become resistant and difficult to destroy. Surgery can also cause cancer cells to spread to other sites.
11. An effective way to battle cancer is to starve the cancer cells by not feeding it with the foods it needs to multiply.

What Cancer Cells Feed On:

- i. Sugar is a cancer-feeder. By cutting off sugar it cuts off one important food supply to the cancer cells. Sugar substitutes like NutraSweet, Equal, Spoonful, etc. are made with Aspartame and it is harmful. A better natural substitute would be Manuka honey or molasses but only in very small amounts. Table salt has a chemical added to make it white in color. Better alternative is Bragg's aminos or sea salt.
- ii. Milk causes the body to produce mucus, especially in the gastro-intestinal tract. Cancer feeds on mucus. By cutting off milk and substituting with unsweetened soy milk, cancer cells are being starved.
- iii. Cancer cells thrive in an acid environment. A meat-based diet is acidic and it is best to eat fish, and a little chicken rather than beef or pork. Meat also contains livestock antibiotics, growth hormones and parasites, which are all harmful, especially to people with cancer.
- iv. A diet made of 80% fresh vegetables and juice, whole grains, seeds, nuts and a little fruits help put the body into an alkaline environment. About 20% can be from cooked food including beans. Fresh vegetable juices provide live enzymes that are

easily absorbed and reach down to cellular levels within 15 minutes to nourish and enhance growth of healthy cells. To obtain live enzymes for building healthy cells try and drink fresh vegetable juice (most vegetables including bean sprouts) and eat some raw vegetables 2 or 3 times a day. Enzymes are destroyed at temperatures of 104 degrees F (40 degrees C).

v. Avoid coffee, tea, and chocolate, which have high caffeine. Green tea is a better alternative and has cancer-fighting properties. Water - best to drink purified water, or filtered, to avoid known toxins and heavy metals in tap water. Distilled water is acidic, avoid it.

12. Meat protein is difficult to digest and requires a lot of digestive enzymes. Undigested meat remaining in the intestines become putrefied and leads to more toxic buildup.

13. Cancer cell walls have a tough protein covering. By refraining from or eating less meat it frees more enzymes to attack the protein walls of cancer cells and allows the body's killer cells to destroy the cancer cells.

14. Some supplements build up the immune system (IP6, Essiac, anti-oxidants, vitamins, minerals, EFAs etc.) to enable the body's own killer cells to destroy cancer cells. Other supplements like vitamin E are known to cause apoptosis, or programmed cell death, the body's normal method of disposing of damaged, unwanted, or unneeded cells.

15. Cancer is a disease of the mind, body, and spirit. A proactive and positive spirit will help the cancer warrior be a survivor. Anger, unforgiveness and bitterness put the body into a stressful and acidic environment. Learn to have a loving and forgiving spirit. Learn to relax and enjoy life.

16. Cancer cells cannot thrive in an oxygenated environment. Exercising daily and deep breathing help to get more oxygen down to the cellular level. Oxygen therapy is another means employed to destroy cancer cells.

From Amir Kassam, kassamamir@aol.com

Computips!

How to increase the performance of external hard drives?

Today, external hard drives are most commonly used storage devices in any office environment. External hard drives use high speed USB 2.0 (data transfer rate 480 mbps) and FireWire (data transfer rate 800 Mbps) interface for data transfer with system. These external drives are ideal solution for data transfer from one location to another location and for backup of your critical data.

The data transfer rate of external hard disk is very low as compared to internal hard disk but using Windows XP and Windows Vista, you can increase the performance of external hard drives. You can enable the write caching to increase the performance of external hard drives. By default write caching is disabled in all Windows versions, because removable devices could not lose data if you unplug them so quickly. But when you enabled the write caching options then you should disconnect the removable drive in proper way.

Perform the following steps to enable this feature in Windows Vista:

- To active this feature, you will need to be logged into your computer with administrative rights.
- First click on Start button and go to Computer, right click on Computer and select Manage.
- Here on the side menu click on Device Manager, a small Windows dialog box will appear with the title "Device Manager".
- Now expand the "Disk Drives" entry and locate the external hard disk.
- Right click on disk and open the "Properties" option.
- Another windows dialog box will appear with title "External Drive USB Device Properties".
- Under the "Policies" tab, select the check box "Optimize for performance".

Next select both check boxes "Enable write caching on the disk" and "Enable advanced performance".

LAUGHTER ZONE ... JUST TO LAUGH

Softwarism

A client has 2 cows and u need to milk them (Needs software....follow steps)

1. First prepare a document when to milk them (Project kick off)
2. Prepare a document how long you have to milk them (Project plan)
3. Then prepare how to milk them (Design)

4. Then prepare what other accessories are needed to milk them (Framework)
5. Then prepare a 2 dummy cows (sort of toy cows) and show to client the way in which u will milk them (UI Mockups & POC)
6. If client is not satisfied then redo from step 2
7. You actually start milking them and find that there are few problem with accessories. (Change framework)
8. Redo step 4
9. At last milk them and send it to onsite. (Coding over)
10. Make sure that cow milks properly (Testing)
11. Onsite reports that it is not milking there.
12. You break your head and find that onsite is trying to milk from bulls
13. At last onsite milk them and send to client (Testing)
14. Client says the quality of milk is not good. (User Acceptance Test)
15. Offsite then slogs and improves the quality of milk
16. Now the client says that the quality is good but its milking at slow rate (performance issue)
17. Again you slog and send it with good performance.
18. Client is happy???

By this time both the COWs aged and can't milk. (The software got old and get ready for next release repeat from step 1)!!!!

LET'S SING A SONG



Let's sing **Chopin - Tristesse - Chanson de L'Adieu**

Click <http://www.youtube.com/watch?v=RQt27s6RaX0&feature=related> for choir and piano

Or <http://www.youtube.com/watch?v=ikBD3DcSGFM&NR=1> for piano

So deep is the night,
 No moon tonight,
 No friendly star
 To guide me with its light;
 Be still my heart,
 Silent lest my love should be returning
 From a world far apart.

So deep is the night
 O lonely night,
 On broken wings
 My heart has taken flight
 And left a dream.

In my dream our lips are blending,
 Will my dream be never ending?
 Will your mem`ry haunt me till I die?
 Alone am I,
 Deep into the night,
 Waiting for the light,
 Alone am I,
 I wonder why?
 Deep is the night.

FEW NICE/INTERESTING WORDS

"If you want to travel fast - travel alone; if you want to travel far – travel together" – *Anon*

"An invasion of armies could be resisted; but not one idea whose time has come." - *Victor Hugo*

"A good idea will keep you awake during the morning, but a great idea will keep you awake during the night."
 - *Marilyn Vos Savant*

"No person can be a great leader unless he takes genuine joy in the successes of those under him." - *W.A. Nanc*

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[Read all about it in the brochure Groundwater monitoring and communication solutions](#)

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<http://www.eijkelkamp.com/Portals/2/Eijkelkamp/Files/Diver-e-SENSE.pdf>





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INFORMATION ABOUT MEMBERSHIP IN WASWC & HOW TO SEND MONEY

1. Individual membership: US\$5/yr for developing countries; US\$10 for developed countries and persons working in international organizations worldwide. Payment of the fee for 4 years at the same time will enable the membership to be valid for 5 years.
2. Life membership: US\$80 for developing countries; US\$160 for developed countries and persons working in international organizations worldwide.
- 3-1. Organization membership (OM): For universities, research and implemental institutions, government agencies, NGOs, societies, associations and international organizations, etc. Persons belonging to an Organization member will receive the same online products and services as the other two above categories: \$100/ yr for an organization with up to 150 persons; \$150/ yr for an organization with up to 300 persons; \$200/ yr for an organization with up to 500 persons; and \$10/ yr for an additional 100 persons or part thereof. Local organizations in developing countries can request to pay at a lower rate.
- 3-2. Organization subscription (OS): is the same as the Organization membership but the organization wants to limit its involvement only as a subscriber.
- 3-3. Organization cooperation (OC): is the same as the Organization membership but the organization wants to limit its involvement only as a cooperator, without paying a fee. Any organization can be a cooperator for 1-2 years before deciding to join as OM or OS if desired.
4. Gift membership: US\$5/ yr worldwide, to be purchased by anyone to give to colleagues, friends, students, etc.

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

a. Dr. John M. Laflen, Treasurer, 5784 hwy 9, Buffalo Center, IA 50424 U.S.A. Phone: +1-641-561-2324. Fax: +1-641-584-2265 Attn: J.M. Laflen. laflen@wctatel.net. He can receive money from US and Canadian members through Personal Check, Money Order, or Bank Draft (payable to WASWC), and can receive VISA and MasterCard credit cards and Bank Draft (payable to WASWC) from all over the world. For sending money through a bank, please give the following information to your bank:

- Foreign wires: United Bankers Bank, 1650 West 82nd Street, Bloomington, MN 55431, U.S.A. Routing number 091 001 322; Swift Code UBBKUS41; for benefit of First National Bank of Volga; account number 091 402 552; further credit World Soil #703-488.

- Domestic wires: United Bankers Bank, 1650 West 82nd Street, Bloomington, MN 55431, Routing number 091 001 322; for benefit of First National Bank of Volga; account number 091 402 552; further credit World Soil #703-488.

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

IMPORTANT NOTES: 1. DO NOT write the word ‘WASWC’ in your remittance document, as it will cause a problem, since this is an alternative account that supplements the official one (a, as above).

2. Do not deduct the bank fee from your side from the amount of money to send.

3. For sending money by wire/bank transfer or check please add US\$8 per transaction to compensate for the charge at the receiving bank in Bangkok. This additional charge is NOT applicable for the payment of membership fee(s) of US\$50 or more.

c. You can also send to Dr. Samran Sombatpanit (use the address shown in b.) through the **Western Union worldwide money transfer service**. Learn how to send from www.westernunion.com. Their service is quick and the transfer fee has been much reduced from the earlier time. Also as in (b), please do not deduct the money transfer fee from the amount to send but do not have to add US\$8 as shown in (b3) above. Please write to sombatpanit@yahoo.com to show your intention before sending.

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