



Department of Soil Quality

SOQ Newsletter 8, September 2015

Welcome to the 8th edition of the SOQ newsletter. The next release is scheduled for December, so please send in contributions before November 25, to [Marnella van der Tol](mailto:Marnella.van.der.Tol@wur.nl)



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Introducing MSc students

I am **Rustiana Yuliasni**, from Indonesia. I studied Environmental Technology for my bachelor and continue to study Environmental Science, specialized in environmental technology. I am now doing my minor thesis with the topic adsorption of antimony in soil under supervision of Liping Weng.

Beside studying, in my spare time I enjoy reading, but since I moved to Wageningen I start to enjoy travelling. For the last 2 years, I've been travelling to many places but always keen to come back to Wageningen, which already became my second hometown. I really enjoy studying at Wageningen University. After completing my master degree, I will return to Indonesia. I will continue my job, as staff member at the Ministry of Industry of Indonesia, and transfer all the valuable knowledge and experiences I've got for the development of my institution.



Hi everyone, my name is **Sebastian Ayinbisa Yanore** from Ghana. I studied Agriculture with specialization in Soil Science at university of Ghana. I am now doing a master study in climate studies and my thesis subject is *"the effect of earthworms on yield-scaled emissions"*. Ingrid and Jan Willem will be my supervisors. I am passionate about biological activities in nature and I admire how earthworms and termites work in soils, but I also like playing football and watching investigative movies.

After my master's degree, I will like to do more research as a PhD student/researcher to contribute more to the scientific community but also to find answers to societal needs.

My name is **Paul Peters** and I am starting my PhD within the group of Soil Quality under the supervision of Mirjam Pulleman and Lijbert Brussaard. I am mainly based in Cali, Colombia at the International Center for Tropical Agriculture (CIAT).

In this research I will link the social data (e.g., farmers preferences on tree species, farmers perceptions on deforestation) and biophysical soil measurements to create a baseline for the overall project in the upper region of Caqueta in the Colombian Amazon. Information collected with PRA methods will be used to analyze the links between the social problems, deforestation and land degradation (bio-physical component). The main land use (extensive cattle ranching) in degraded lands has a huge impact on the deforestation rate in the area. Many farmers are not able to sustain themselves in this region and need more land to raise the same amount of cattle and maintain self-sufficient, which is reflected in the high deforestation rate of the region. New innovative sustainable farming systems will be introduced to reduce deforestation by improving productivity of their traditional farming systems (e.g silvopastoral systems).



This research is embedded in a larger project to create sustainable landscapes in the Amazon. The two regions (Caqueta in Colombia and Yurimaguas in Peru) where we are working are hotspots of

deforestation. This deforestation can be seen on satellite images of Terra-I (<http://www.terra-i.org>). In both regions there are different realities inducing this deforestation. In Colombia cattle ranching is a major cause while in Peru a big company is creating oil palm plantation (5000 ha) by deforesting primary forest.

More information:

<http://dapa.ciat.cgiar.org/creating-sustainable-amazonian-landscapes-sal-through-participatory-research-in-the-productive-agricultural-systems-of-caqueta-colombia/>

<http://dapa.ciat.cgiar.org/increasing-local-capacities-in-participatory-rural-appraisal-methods-in-caqueta-colombia/>



Photo PJE Peters: Participatory methods of tree species selection for Silvopastoral systems

I'm **Ziqi Zeng** and I come from China. For my bachelor I studied Biotechnology in Guangzhou (China) and then I decided to continue my studies here in the Netherlands. I'm attending the master program of Plant Sciences and my specialization is Natural Resource Management. My thesis project is about plant diversity and phosphorus uptake. I'm very passionate of nature, but I love also sport, cinema and photography. I like street dance, I really enjoy dancing and it makes me feel very happy and confident. After my master I hope to go back to China and be a high-school biology teacher and a part-time dancing teacher.



Hey, I am **Guusje Koorneef** and many of you have seen me around already. I am doing my MSc thesis about the effect of earthworms on organic matter stabilization in Terra Preta soils. I am helped in this by Mirjam, Rob en Clara from the Sinchi institute in Leticia, Colombia. Actually, I am writing this text right there, in the hot capital of the amazing Amazon... (see picture with my creepy/lovely scorpion-spider friend...). I am studying the master Environmental Sciences, after having done its bachelor as well at the WUR. I have never lost interest in this broad study field, merely the opposite I guess. While studying the environment so many different things have to be taken into consideration, that is endlessly fascinating. And for me, it is just the same with soils!

In my free time I like to play guitar while singing along, or listen to music, dance, meet friends, play sports... So shortly said to enjoy life. Hope to talk to you when I am back!



All pictures on this page were taken during fieldwork (soil description, macrofauna sampling, searching in terra preta and non terra preta references near Leticia).



Introducing Marcel Hoosbeek

Per September 1st 2015 I happily joined the Soil Chemistry group. I studied soil science in Wageningen with majors in geomorphology, soil formation and soil physics. After graduation in 1988, I moved to Ithaca, New York, where I worked as a teaching and research assistant in order to survive as a PhD student at Cornell University. I built the "best playground ever" in the sub-boreal forest of the Adirondack Mountains with throughfall collectors and 3 fully equipped soil pits which I visited every month for 3 years. Based on field samples and lab incubations I

studied weathering processes (yes, it was the acid rain era), leaching, adsorption, SOM decomposition, Al-chemistry, etc. Even tried to put it all in one Fortran model. I learned a lot from my soil chemistry supervisor Murray McBride.

After a postdoc job with Charles Driscoll and Myron Mitchell at Syracuse University (more Adirondack biogeochemistry), I started September 1st 1994 in Wageningen as a postdoc (geostatistics) with Johan Bouma. Few years later I worked with Nico van Breemen on an EU project in which bog ecosystems were subjected to elevated atmospheric CO₂ through mini-FACE (free air CO₂ enrichment) systems. New developments, e.g. biogeochemical methods and looking at soils from the ecosystem perspective lead to the renaming of the group to Earth System Science (ESS) and the development of new courses.

I participated in the POPFACE (Italy) and BangorFACE experiments with trees growing in elevated CO₂ where I focussed on litter and belowground processes like C and nutrient cycling, decomposition, soil C stabilization, etc. Currently I am involved in the ROBIN project in which we examine the relation between tree biodiversity of primary and secondary forests in Mexico, Guyana, Brazil and Bolivia and ecosystem functions like climate change mitigation through C storage. My focus is on litter quality, soil enzyme activities (C N P stoichiometry), mineralisation, soil C stabilization. Other projects include: Giessen grassland FACE in Germany (currently 2 MSc thesis students) and the AmazonFACE project north of Manaus, Amazonia, Brazil (PhD student Karst Schaap and 1 MSc thesis student).

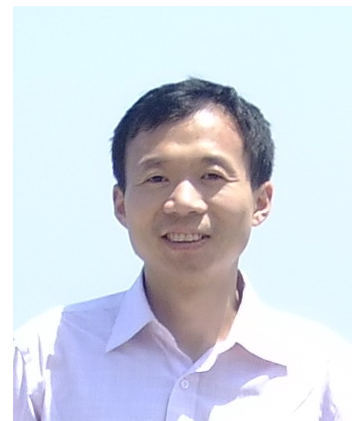
I am coordinator of the following courses: SOQ-23306 Principles of Earth and Ecosystem Science (P1), SOQ-36306 Biogeochemical Cycles and Climate Change Mitigation (P2) and SOQ-35806 Field Training Land-Atmosphere Interactions (P6). Also, I am a member (chair) of the program committee MSc Climate Studies.

So, why did I leave ESS? A few years after Nico van Breemen retired, Pavel Kabat was appointed chair of ESS. As a hydrologist, his interest was mainly with water and climate. The Integrated Water Management group joined ESS and this water-part of ESS was further expanded. Three years ago Pavel left the group and currently new directions are being sought. The ESS-water group is in the process of teaming up with the Water Resource Management group. Other ESS members are seeking asylum elsewhere.

On a more personal note, Tina and I have 3 kids, Gert Jan (17), Emma (15) and Mark (11) and we live in Wageningen North-West. We enjoy outdoor activities like hiking, sailing and camping.

..... and Wei Zhao

Hello! My name is **Wei Zhao** and I come from Northwest A&F University in Yangling, China. I have just recently started my work here as a visiting scholar. I am working on the effect of ferritin on the adsorption of phosphate on ferrihydrite. The research is carried out under the supervision of Dr Liping Weng and Dr Tjisse Hiemstra. Hope to see you around the department! You can find me in room B. 301.





Year of the Soil

As you may know, the Centre for Soil Ecology celebrates the International Year of Soils by (among other things) having a soil animal of the month. In June, it was the earthworm and **Jan Willem** was asked to write a column about this most magnificent of animals!

You can find the English version at <http://www.soilecology.eu/earthworm> and the Dutch version at <http://www.soilecology.eu/regenworm>. There is also additional info (only in Dutch) at <https://nioo.knaw.nl/nl/regenworm>.

Lijbert gave a radio interview at the Vara's Vroege Vogels (Early Birds) program to plead for more attention for soil biodiversity being of importance for future food security. All in the frame work of the Wageningen Soil conference. Sorry, the interview is in Dutch.

[Klik hier voor het interview \(ca. 15 minuten\)](#)



Janna baked a cake for her birthday. It turned out to look like a pot experiment and it tasted wonderful.



Alpe d'HuZes, fundraising by Oene Oenema

The 10th [Alpe d'HuZes](#) has been a success. Until now, about 15 million euro has been collected for research related to curing cancer. The WUR team has collected about € 40.000 until now. It has been a special experience for me. We had to wake up at 2.00 in the morning, to eat as much as possible. At 3.00 we cycled down-hill (with light on the bicycles). All 21 curves were illuminated with hundreds of candles. Downhill, we had to arrange ourselves in position, waited for about 1 hour and then started to climb at 4.30.

The first three climbs were relatively easy. The fourth one relatively heavy, because of the temperature (>30 °C). The fifth climbing was with heavy showers.

At 18.00, I arrived for the fifth time uphill (one time more than I expected).

Alpe d'HuZes is not only a fundraising campaign for combatting cancer, for many participants it is also a 'pilgrimage'. There are meetings to remember beloved persons who died because of cancer. Some cyclists passed the finish line crying and also along the road you may find people who are touched.

It has been a great experience for me to cycle with 5000 other cyclists and many runners uphill the Alpe d'Huez. Thanks to the financial contributions and the many volunteers along the road it has been a special day.



A son for Valentina and Silvio

"Little" (4.585 Kg!) Arturo is born on Tuesday morning the 14th of July after 42 weeks! Valentina and Arturo are doing fine.



Arturo
Zangarini

14 Luglio 2015

Utrecht, ore 06:37 a.m.

56 cm 4.585 kg



..... and a baby girl for Karst and Elske.



Interesting links

- [SOQ website](#)
- [Chemical Biological Laboratory](#)
- [Terra Preta](#)
- [Science cafe](#)
- [colloquia Environmental Sciences](#)
- <http://www.soilecology.eu/>

Oral defences in May, June, July and August

May 12, **Yunyu Pan**: 'Speciation of trace metals and their uptake by rice in paddy soils'



On June 15, **Maaïke van Agtmaal**: 'Predicting disease suppression of agricultural soils'



On June 17, **Angela Straathof**: 'The role of dissolved organic matter in disease suppression of agricultural soils'.





On July 1st, three PhD candidates of the Terra Preta program successfully defended their PhD theses. These were Tatiana Franchinelli Rittl, Clara Pena Venegas and Estela Quintero Vallejo. The previous day the program organised a successful symposium on Terra Preta. The success of the program did not go unnoticed – the board of directors of the Environmental Sciences Group awarded Thom Kuyper the so-called “success of the month” in recognition of what the program has achieved.

Picture below (from L to R): Marielos Pena Claros (former programme coordinator), Tatiana, Thom, Estela, Clara.



Tatiana Rittl: 'Challenging claims on the climate change potential of biochar'



On August 31, **Walter Andriuzzi:** 'Ecological functions of earthworms in soil'.



Upcoming oral defence ceremonies:

Catarina Jakovac on September 30, 16.00 hours on: 'Resilience of Amazonian landscapes to agricultural intensification'.

Wei Qin on October 6, 16.00 hours on: 'Exploring options for improving water and nitrogen use efficiency in crop production systems'.

Steve Crittenden on December 9, 11.30 hours on: 'Biophysical soil quality of tillage systems in conventional and organic farming'.

All presentations will be at the Aula of Wageningen University, Generaal Foulkesweg 1, building 362. Graduation ceremonies can be followed real-time on the internet, click [here](#).



The Atlas Work Floor Survey: Mountains or Beach?



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Holiday Special - "Two things" dedicated to Mountains or Beach

Even though the holiday season is as remote as can be, the choice for this edition of "Two things" was very easy. Apart from some of the SOQ people who like to stay at home during the holidays ('home sparrows'), most of us have not so long ago returned from either mountains or beaches, or from a combined holiday (culture included). So what about the SOQ people? Do they like mountains or beaches?

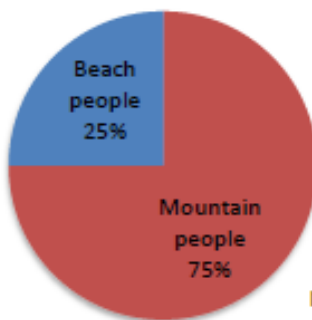


Fig. 1 | Percentage Mountain people and Beach people for the 36 responses of SOQ employees

There is no question about it: on average SOQ employees like mountains. Why, would you think? During the survey it became clear that people like best what they don't have. For example, Sebastian (MSc student in the Soil Biology group since September) likes the mountains, because he grew up on the beach. Wei (everybody knows Wei), on the other hand, likes the beach, because he grew up in the mountains. Therefore, since the majority of the people who replied to the survey happened to be Dutch, "mountains" was the most frequent answer. Obviously the Dutch mountains are of a high standard, but we just don't have enough of them that really stand out (except when having to climb one with the bicycle), like Wei must have, near his home town.

There is no use of looking further into the survey's data because there are no more obvious differences. Except for one: most of the Chinese in our department like the beach. This

completely confirms our freshly cooked hypothesis because the Chinese have many exquisite mountains, but is not as famous for its blissful beaches.

In-depth interview with Jan Willem, mountaineer AND beach boy

Jan Willem, you grew up on an island with both beaches and a high mountain. As both mountaineer and beach boy, what insights can you give us about the differences between the two?

"First of all, I want to make something clear: I am most certainly not a beach boy! I grew up on the footslopes of the Hoge Berg. The Van Groenigenen are a mountain people. I have one uncle who lives pretty close to the beach, but we don't talk much about him at home. Not many people know this, but Texel families are traditionally divided between highlanders and lowlanders, just like the Scottish. In fact, technically the term was imported from Texel to Scotland, together with superior sheep. Fortunately for everyone, on Texel we discarded the kilt long ago. It proved to be incompatible with the sudden upward gushes of wind that we have on our island."

Can you tell us something more about the spectacular geography of Texel?

"The Texel mountain range is relatively limited in length, but very high. Well, at least in terms of quality. The aptly named Hoge Berg ("High Mountain") towers a whopping 15 meters above sea level, as well as above some of our lower lampposts. We also have the only Dutch volcano close to Texel (The "zuidwalvulkaan"), although its peak is not very high. In fact, it is located 2000 meters below sea level."

As a real highlander, what is your relation (if any) with the beach?

"Well, a problematic one, obviously. On the one hand, it stands for everything that I have learned to despise. On the other hand: it is difficult to deny that, in order to have an island, you need a coastline, and a coastline means beaches. So I guess there should be a place for them under the sun. And Texel being a beautiful island, I must admit that it also has exceptionally beautiful beaches that can compete with any beach in the world, as these pictures (see World Famous Beaches) clearly testify."

How did this mountainous background influence your life?

The biggest family crisis occurred when I developed a taste for surf music at the age of 11. Frankly, I don't really want to talk about it... Suffice it to say that, after some intense convincing from the more masculine part of our family, I have swapped the Beach Boys for the Eagles, and Dick "King of the surf guitar" Dale for John "Rocky mountain high" Denver. After that, my family ties have been mostly restored, although I will always remain the black sheep of the family (technically, also an expression originating from Texel, indicating inferior sheep not coming from Texel). However, the most lasting influence that my mountain heritage has left on my life is my career. After all, with such a background, there was only one possible place to study: Wageningen, which also has a mountain (albeit not a high one)."

Map of Texel – with the Hoge Berg



Extra's

DID YOU KNOW...

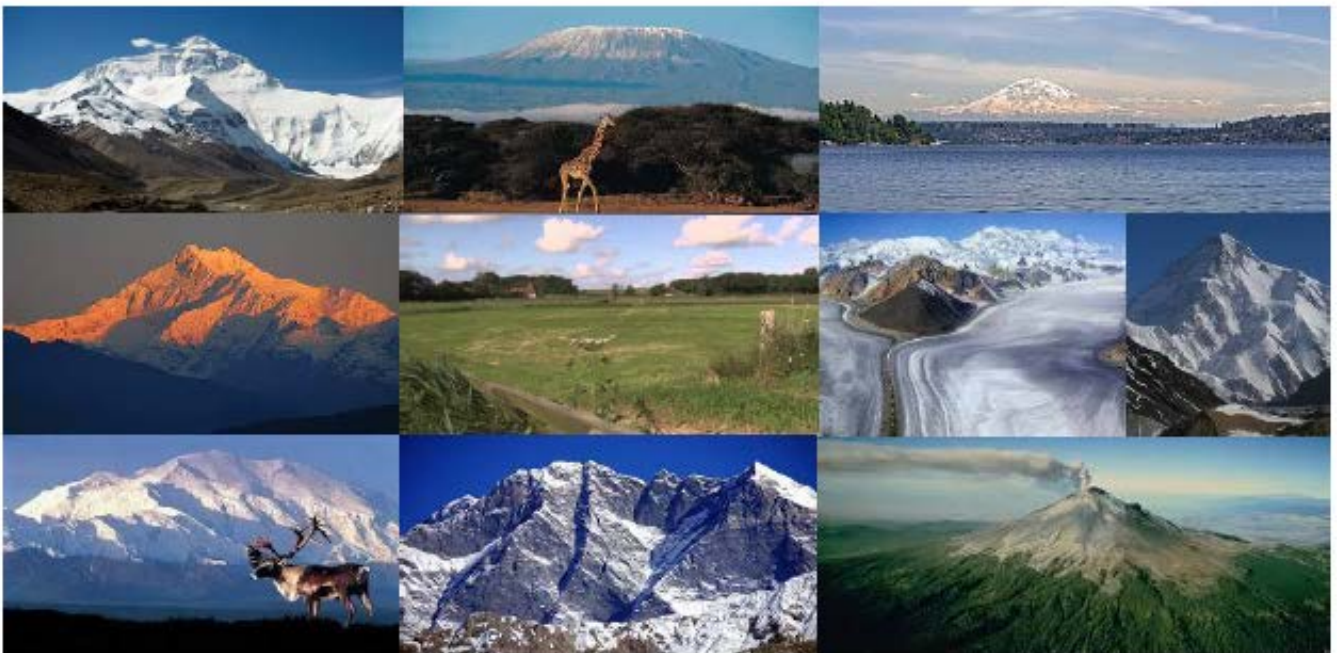
- André and Willeke were the quickest to say "mountains!"?
- Many soil scientists love sand in their experiments?
- But hate it on the beach?
- Marnella lives right on top of a mountain?
- Ron only likes worn down mountains?

World Famous Mountains:

| Name | Country | Height in feet | First climbed |
|--------------|---------------|----------------|---------------|
| Everest | Nepal-Tibet | 29,028 | 1953 |
| K2 | Kashmir | 28,250 | 1954 |
| Kanchenjunga | India-Nepal | 28,208 | 1955 |
| Lhotse | Nepal-Tibet | 27,923 | 1956 |
| Makalu | Nepal-Tibet | 27,824 | 1955 |
| McKinley | United States | 20,320 | 1913 |
| Logan | Canada | 19,859 | 1925 |
| Kilimanjaro | Tanzania | 19,340 | 1889 |
| Popocatepetl | Mexico | 17,930 | 1519 |
| Ranier | United States | 14,410 | 1870 |

<http://teacher.scholastic.com/activities/hillary/archive/toptenmt.htm>

Here you can see them: can you spot the Hoge Berg?



World Famous Beaches:

- Seychelles
- Maldives
- Bora Bora, Tahiti
- The Hamptons, New York
- Lanikai Beach, Hawaii
- Nantucket Island, Massachusetts
- Fraser Island, Australia
- St. Bart's
- Langkawi, Malaysia
- Kauna'oa Bay, Hawaii

Here you can see them: can you spot the Texel beach?



Famous quotes

On vacations: We hit the sunny beaches where we occupy ourselves keeping the sun off our skin, the saltwater off our bodies, and the sand out of our belongings.

Erma Bombeck

It isn't the mountain ahead that wears you out; it's the grain of sand in your shoe.

Robert W. Service

Simon's Favourite soil ~~species~~ OTU

Being asked to write about your favourite soil species may not seem very tax(a)ing, but it is hard to be *specific* for a couple of reasons - ahem. First, I am a functional ecologist – I am not so interested about what is there, but rather what it is doing. Second, my background is in soil microbiology, and at that scale it is not entirely sure that the concept of species actually means anything. This led to the introduction of the acronym OTU – operational taxonomic unit – which doesn't really clean things up any more other than to say we like grouping things together as it helps to think about them.

Why are there no species at this level? Well bacteria are extraordinarily good at taking up DNA from the environment and using it (in a process known as lateral gene transfer). This would be like us being to change eye colour by picking up the right bit of DNA which we happen to find lying around on the floor. This means that within the one "species" *E. coli* there can be literally ten times more genetic variation than is found between humans and chimpanzees...

So, perhaps you could come back and ask an easier question next week, such as what is my favourite colour; I almost know the answer to that one...



3 questions for Kimo!



1. WHAT'S YOUR FAVOURITE
COLOUR?

.....
"GREEN, as you probably all are
aware off"

2. WHAT'S YOUR FAVOURITE
DISH?

.....
"The Dutch Weed Burger
(<http://dutchweedburger.com>)"

3. WHAT'S YOUR FAVOURITE
BOOK?

.....
"The Dutch classic "Titaantjes"
by Nescio (famous opening: "We
were boys, but nice boys...")"

BONUS QUESTION.

**How do you think that your phosphorous research
will help bring about world peace?**

"Peace? War! It only makes more clear that mined minerals
are non-renewable on a human time scale and that we have
to fight for them, not only P, but many more elements ;-)"

SOQ @ Opening Academic Year 2015

Pictures by Bart de Gouw, Wageningen UR; text Gerlinde De Deyn, SOQ-WUR

After a long, or not so long, summer break it was high time to kick start the activities again. Monday 7 September 2015 the official Opening of the Academic Year (OAY) 2015 at Wageningen UR took place with the theme of this year: 'Disruptive thinking'.

I had seen the announcement already before the summer break and have to confess my plan was to check the highlights of the event via wurtv shortly after the actual event. It all turned out quite differently... Sometime during the week of the Wageningen Soil Conference end of August I found a nice surprise in my email inbox. I had to read it twice to check the content, and yes I was asked for a life contribution during the OAY! 'Yes of course' I responded, not quite sure what I said yes too, but time would tell.

So there I was last Monday seated next to our rector Prof. Arthur Mol and Tom Wennekens, one of the other two invited speakers from WU, on the first row of a packed Orion. The good part of sitting in the front is that you are not confronted constantly with the idea that yes you will be speaking to many people and quite a different audience than the more usual ones. Of course I was there with a mission: showing the wonders of Soil Biology! and that is worth a bit of nerves.



Daan Roosegaarde, artist/designer/inventor, was the main guest speaker at the OAY. He delivered his very inspiring talk presenting some of his impressive projects after the introduction of the theme by Louise Fresco. Right after his applause time to get going...



There we were the three commenters getting some final instructions from Louise Fresco. No complications, just the simple task to each reflect in our own way on the theme Disruptive thinking. I would go first, followed by Tom Wennekens and Paul Roncken.

To me disruptive thinking is all about the way the thinking process goes and when it is happening in a rather 'unorganised', 'un-coherent', 'leaping' kind of way resulting in surprising results I find that disruptive, in the positive sense of the word. My 5 minutes of fame were hence centred around the story of how two of my unplanned projects got to see the light. Of course those projects do have Soil Biology and in broader sense Soil Quality at the heart of it.



I shall not write out the words that I spoke as the OAY2015 is freely available online, <https://wurtv.wur.nl/p2gplayer/Player.aspx?id=e274Zi> my contribution starts about half way the whole ceremony. My advice, especially to our younger researchers and students: if you ever get asked for a contribution at an event like this go for it! Always a bit scary but great fun and I am sure you all have a story to tell :-)