

19 at the top

More highly cited
researchers than ever | **p.5** |

While they still can...

Voles have more babies
in scary times | **p.8** |

#MeatToo

Can you be a real man
without meat? | **p.22** |

RESOURCE [EN]

For everyone at Wageningen University & Research

no 8 – 6 December 2018 – 13th Volume



Green city, cool city


Turning down the heat with trees | **p.12**

Vittorio + Formlabs Form 2

Vittorio Saggiomo, assistant professor at BioNanoTechnology



CREATIVITY WITH LASER LIGHT

3D printing has long since passed the 'fun new toy' stage. Vittorio Saggiomo is using it to make new nanocomposite materials, microfluidics and refined parts for technical equipment. There are several printers in his lab. This one, with its bright orange lid, prints from a bath of liquid acrylates. A laser beam converts the liquid into solid form through a photochemical reaction. Clinging to a tray, the print rises up out of the liquid, molecule by molecule, layer by layer. The cube in the photo is a test print, by the way.  RK, photo Sven Menschel

>> CONTENTS

no 8 – 13th volume



>> **18**

DAVID KLEIJN

'The decline in biodiversity is not all the farmers' fault'



>> **20**

9000 KILOMETRES

Programmer Bart-Jan walked Marco Polo's silk road



>> **26**

OUTDOOR PLAY

It's for adults as well at Woest survival running club

AND MORE...

- 4 New portal for all WUR science**
- 6 No ERC grants again**
- 7 Bacteria against barren soils**
- 8 Measuring relief on Saba Bank**
- 10 Suzuki fly is a survivor**
- 16 Live broadcast in Lumen**
- 24 Carlos is a student and a CEO**
- 25 Enactus's social projects**
- 27 Meanwhile in Sri Lanka**

MARRY A MEAT-EATER

Hard work is going on this week in Katowice, Poland, to keep global warming down to two degrees Celsius (see p.27). The results are predictable: small steps will be taken but there will be no major agreement. And we have probably already passed the two-degree point. To show what that means, the NOS put together a TV programme called 'What weather', broadcast live from the indoor garden at Lumen (see p.16). The gist of the message was: get ready for heavy rain, drought, and above all, heat. How to do that is explained by landscape architect Wiebke Klemm on page 12. She knows how to make our cities heat-proof. But of course, the best thing would be if we could still reduce our CO₂ emissions between us. By eating less meat, for instance. The Netherlands Nutrition Centre Foundation is trying to persuade men to cut down on meat using cutesy slogans like 'Never bean so happy'. *Resource* asked students and staff for their views on that (see p. 22). What do I think? No way will a campaign like that work. But what does help is love. Decades ago, before climate change was a thing, I changed my carnivorous ways by marrying a vegetarian. Never bean so happy! So, vegetarians everywhere: save the world, marry a meat-eater.

Roelof Kleis, editor



>> [Is this lettuce healthy? Its wild cousins are much healthier. | p.9](#)

RESEARCH EASIER TO FIND WITH NEW PORTAL

The new platform Research@WUR was launched a few days ago. The portal gives a better and more comprehensive overview of WUR's entire scientific production than the old Staff Publications.

Research@WUR is an Elsevier product and is based on the research information system Pure. The library has been using Pure for a while now. All the research output by WUR researchers is recorded in this system.

Research@WUR is the new interface and offers a more user-friendly method for viewing and searching this output.

Each Wageningen researcher has their own page in Research@WUR. One click takes you through to the scientific output, projects, datasets and activities in which that researcher is involved. This information could already be found in a slightly different form in the old Staff Publications, but a new feature of

Research@WUR is the Fingerprint keyword system. Information manager Anna Besse: 'The software forms a fingerprint of each researcher based on their research output. That's a kind of list with keywords that characterize the researcher. You can compare it to what we@wur does, but then based on publications. It does this uniformly and automatically.'

Fingerprint lets you search for expertise within WUR based on keywords. According to Besse, that is useful not just for people outside WUR but also for WUR staff. 'For example, if you want to submit a call proposal and you want to know who else is working on your topic so as to explore the possibility of collaboration.'

The graphs showing the internal and external collaborative ventures in which a researcher is involved are both impressively slick and



▲ A Wageningen professor's global network as shown in Research@WUR.

informative. They show at a glance a network or a global map of all co-authors the researcher has worked with. One more click and the articles pop up. 'That's only for the past five years,' says Besse. 'Co-authors weren't included in the registration before then.'

Research@WUR is currently only available through the WUR intranet. The system will have to prove its worth internally first over the next few months; then it will be launched for the general public next March. **BRK**

PHOTO: PHOTOSTUDIO GERARD JAN VLEKKE



QUEEN IN THE GREENHOUSE

On her state visit to the Netherlands, the president of Singapore, Halima Jacob, visited the greenhouses at WUR business unit Greenhouse Horticulture in Bleiswijk, in the company of Queen Máxima. The visit on 22 November was related to the theme of sustainable urban farming. 'As a city state, Singapore is one big ur-

ban farming territory,' says Ben Geerlings, international communications advisor at WUR, who was present during the visit. 'And the president was extremely interested in WUR's knowledge in this area.' Memoranda of understanding were signed during the visit, including between Nanyang Technological University and WUR. **TL**

'WUR PROJECT IN LEBANON DESERVES TO BE COPIED'

WUR is supporting young entrepreneurs in Lebanon who are building up the food sector. The approach is working, and the Dutch cabinet therefore wants to invest a further six million euros in startups in developing countries, says coalition Christian Democrat party CDA.

CDA parliamentarians visited Berytech, a programme at Saint Joseph University in Beirut which supports agricultural startups. The Ministry of Foreign Affairs is funding the programme, and WUR is a knowledge partner. The project is successful and should be rolled out in other Arab and African countries, says the CDA – a plan which the other coalition parties would support.

At WUR, Startlife is involved in the Lebanese project. 'The agriculture sector is functioning badly in Lebanon,' says Gitte Schober of Startlife. 'With Berytech – the Leba-


nese university's Startlife – we support entrepreneurs who develop sustainable and precision agriculture. We've been doing this for two and a half years now, and we've already supported more than 50 startups.' One example is a small company called Cubex, which used Wageningen knowledge to develop an installation that purifies water, produces biogas and makes compost. The installation is already operational in a refugee camp for Syrians.

The entrepreneurial climate in Lebanon is far from ideal because the country is officially at war with Israel and has a Hamas government. The elite has fled the country, corruption is rampant, and tax rates for entrepreneurs are punishingly high. 'A change of system is needed from the bottom up,' says Schober. 'We work a lot with well-educated expats who return to try to improve the hopeless situation there. They have incredible drive.' **AS**

RECORD NUMBER OF HIGHLY CITED RESEARCHERS

Nineteen Wageningen researchers can currently consider themselves top scientists, going by the list of Highly Cited Researchers 2018 recently published by Clarivate Analytics.

Never before has WUR had so many researchers on the list. The 19 Wageningen scientists are in the top one per cent in their scientific field when it comes to citations of their work over a period of 10 years.

Last year, there were nine WUR researchers on the list, but the top-scoring microbiologist Willem de Vos was missing because he operates on the cutting edge of several different disciplines. Now an additional category has been added – cross-field researchers – and this has panned out well for WUR. Seven of the 19 top Wageningen scientists come under this new category.  RK

HIGHLY CITED RESEARCHERS AT WUR:

- Frans Bongers
- Harro Bouwmeester
- Stan Brouns
- Vincenzo Fogliano
- Marianne Geleijnse
- Ken Giller
- David Kleijn
- Bart Koelmans
- Lourens Poorter
- Marten Scheffer
- Bart Thomma
- Richard Visser
- Rudolf de Groot
- Willem de Vos
- Jan Willem van Groenigen
- Martin van Ittersum
- Egbert van Nes
- John van der Oost
- Wim van der Putten

COLUMN|VINCENT

Birds of a feather

Are they Ukrainian separatists who have lost their way? Paparazzi from the national gutter press? No, they are twitchers, and they belong to a rare subspecies of birdwatcher.

It took a while before the penny dropped on Tuesday 20 November, when I saw dozens of men in camouflage gear in front of the student residence on the Marijkeweg. They had their tele lenses trained on a second-floor balcony. Nothing happened for a while, until a bird flew out from the balcony and the entire assembled company rushed after it. Then I knew. They had to be twitchers, the men – yes, mostly men – who jump into their cars as soon as they hear that a rare bird has been spotted in some corner of the country.


This time that corner was the western edge of Wageningen, and the rare bird was a nutcracker. I had seen a nutcracker once – in a moment of quiet luck in the Black Forest – but the twitcher was a new species to me. I knew of its existence but I had never seen one close-up. Until now. There they stood in their full fanatical glory, crowding around a 180-gram speckled rarity and hoping for that one unique photo. It was incredibly busy and all very jolly. The only thing lacking was a refreshments stall. But it didn't last long. Because although at the time of writing the nutcracker is still hopping from balcony to balcony, most of the twitchers have moved on. To the next rare sighting. 




PHOTO: ERIC BUERMEYER/SHUTTERSTOCK.COM

Vincent Oostvogels (23) is exploring the delicate interface between nature management and food production through his two Master's programmes, Forest and Nature Conservation and Animal Sciences




in brief

>> 100 YEARS OF THE LEB FOUNDATION Support for PhD students

The LEB foundation is 100 years old. Over the past century, it has spent two million euros on Wageningen research and study tours. The foundation, named after the agricultural exports bureau set up in the Netherlands during World War I, honours about 60 applications per year from PhD students, postdocs and foreign guest researchers at WUR. The money enables them to attend a conference abroad or go on a study tour. The board of the LEB foundation is made up of five Wageningen professors: Wim Heijman, Ivonne Rietjens (chair), Marcel Dicke, Imke de Boer and Remko Uijlenhoet. To mark the centenary, the board is going to launch a new website on which researchers describe what they did with a contribution from the foundation.  AS

>> CANNABIS FARMING WUR shares its knowledge

Wageningen scientists want to contribute as knowledge partners to making a success of a government experiment with legal, municipal cannabis cultivation for coffee shops. 'Research institutions like ours can take the cultivation of this crop to new levels, making it more sustainable, safer, and healthier,' says the team leader, plant scientist Eric Poot. WUR already has a licence to grow cannabis for research purposes, and has been experimenting at undisclosed locations with using LED lighting in the cultivation of medicinal cannabis. Next year, 10 Dutch municipalities will be licensed to grow cannabis for coffee shops. Which ones they are has not been announced yet.  HOP

>> OPEN ACCESS The Netherlands in the lead

Of all the scientific articles with a Dutch author in 2016, 44 per cent were published open access, says the Rathenau Institute in a report. Before 2002, the figure was only 20 per cent. This increase puts the Netherlands ahead of its neighbouring countries, says the Rathenau Institute. In Belgium, 36 per cent of publications are open access, in Germany 33 per cent and in France 30 per cent. Only the United Kingdom approaches the Dutch researchers' score, with 43 per cent.  HOP,  Oscarine Vonk



PHOTO: GUY ACKERMANS

▲ The board of the LEB foundation.

NO ERC GRANTS AGAIN THIS YEAR

This year, Dutch universities were awarded 19 consolidator grants worth 2 million euros by the European Research Council (ERC). But for the second year in a row, Wageningen is not among them. WUR plans to organize courses in a bid to boost the university's score on this front.

The ERC's consolidator grants are intended for good scientists who have been working for seven to twelve years since getting their doctorates, and want to strengthen their research group. In the past five years, four Wageningen researchers succeeded in bagging one of these grants, out of a total of 17 applications.

That puts the Wageningen percentage of successful applications twice as high as the average, says Henrieke de Ruiter of Corporate Strategy & Accounts. But Wageningen researchers submit relatively few proposals to the European Research Council. So the Executive Board has decided there should be courses for Wageningen researchers to help them write more and better research proposals for the ERC. There is a course for researchers aiming at a consolidator grant on 6 December. The advanced grant will be the subject of a course on 5 March, and both the starting and the consolidator grants will be covered on 18 April. **LZ**

STUDENT CHALLENGE 2019: SUSTAINABLE PROTEIN PRODUCTION

How can we meet the protein needs of the growing world population? This is the question the participants in the new Student Challenge are going to answer. Students can register until 10 March.

The first WUR Student Challenge was held last year, and focused on sustainable urban farming. This year, the competition is called the Student Innovation Contest: ReThink Protein, and it is about sustainable protein production and consumption.

'The human diet contains large amounts of animal protein, which cause a lot of emissions, relatively,' explains Master's student of Biology Jolien Verweij (25). 'We must make that more sustainable, but how? That is the question the participants are going to grapple with.' Verweij and the GreenWURks team won this year's Greenhouse Challenge. On the strength of her experience, she was asked to help think through how to organize the new challenge.

WUR wants to make the competition more accessible to Bachelor's students than the previous one was. So this time there are two levels of participation: ideas development and prototyping. Verweij: 'In ideas development you work out an idea and develop a business plan. It is feasible to do that alongside a Bachelor's degree programme. Prototyping goes a step further: then you are already making or honing your prototype and your business plan. We expect it will be mainly Master's and PhD students



who go for that level, as well as student startups.'

The ReThink Protein assignment is quite a bit freer than that of the Greenhouse Challenge, says Verweij. 'Instead of redeveloping an existing building into an urban greenhouse, you are now free to invent anything you like, as long as it contributes to more sustainable protein consumption. You could do that by looking at sustainable sources of protein or by making production processes more sustainable. But you could also think up a business model for a sustainable fast food chain, for example.'

The Innovation Contest is due to start in March, and the finale will be on 27 July. After that, the best Wageningen teams will compete in the 4TU with teams from the Universities of Twente, Delft and Eindhoven. **LZ**

FILM CREW IN THE FORUM

The Forum fulfils several functions. It is a teaching building, of course, and it is also a library, a service centre, a place to chill out, a restaurant, and so on. A new function was added on Saturday, 24 November: a film set. The production crew of the television film *Boy Meets Gun* descended on the Forum with their cameras, lamps, make-up artists and the rest. The film, about a boy who accidentally ends up in possession of a pistol, will be premiered on TV next year. Featuring Wageningen students as extras. **LZ**



PHOTO: GEA HOGVEEEN

NWO gives 50,000 euros for developing a 'wild' idea

BACTERIA FOR BARREN SOIL

Can you give degraded soil a new lease of life with the right bacteria? Possibly. The idea is 'crazy' enough to be worth a try, thinks science funding organization NWO.

NWO is giving soil physicist Martine van der Ploeg and professor holding a personal chair in Soil Biology Gerlinde de Deyn 50,000 euros to work on this. Their plan, *Skin Care for Mother Earth*, is one of five projects that secured an Open Mind grant. The NWO uses these grants to encourage socially relevant research that is outside the box.

Van der Ploeg became inspired by the *Creative Innovation: Science meets Art* project, which was organized on campus as part of the centenary year. In the project, she col-

laborated with New York artist Cody Healy-Connelly. 'That collaboration taught me not to be fixated on having something that's feasible,' she explains. That led to the idea that extremely degraded agricultural land could be made fertile again by adding the right soil life.

'There are bacteria that produce a kind of film made of biopolymers that have the property of holding water,' explains Van der Ploeg. 'That lets them contribute to the soil structure and to fertility. I know one bacterium that does that but we want to find an entire group of such microorganisms.' The next task is to find the right combination of bacterium and soil. 'Of course we are not going to be introducing invasive exotic species.'



▲ Degraded agricultural land could be made fertile again by adding the right soil life, thinks soil physicist Martine van der Ploeg.

Van der Ploeg stresses that they are not planning to bring the desert to life. 'Deserts are ecosystems

in their own right. This is about soils that received some kind of blow and never recovered.' **© RK**

Science Cafe
Wageningen
www.sciencecafewageningen.nl
Music by: Sun Inside

Microplastics
from sink to source

Thursday, Dec. 13
Café Loburg
19:45 Live music
20:15 Science
FREE ENTRANCE

prof. Bart Koelmans (WUR)
dr. Stefan Kools (KWR)

Partners:
Sponsored by: **KLV** **WAGENINGEN UNIVERSITY & RESEARCH** **LCBURG**
RESOURCE

Thanks!

The festivities of 100 years WUR have ended.

Thank you for participating in 100 years Wageningen Wisdom & Wonder!

Look back with us on a successful celebration.

Go to www.wur.eu/100years

100years 100years 100years 100years

WAGENINGEN
UNIVERSITY & RESEARCH

100years 1918-2018

FEAR CAUSES BABY BOOM AMONG VOLES

Female voles have more babies after smelling the odour given off by frightened males, discovered researchers at WUR and Jyväskylä University in Finland. They published their findings in *Scientific Reports*.

'The striking thing is that this effect was caused by indirect information about the presence of a predator,' says co-author Kevin Matson, a researcher in the Resource Ecology chair group. 'The effects of predators go beyond just devouring their prey. Our study shows that even just the fear of being eaten has an influence on the entire population.'

The researchers conducted an experiment with *Myodes glareolus*, a bank vole common in Finland. They removed some bedding from the holes of males that had encountered a weasel, and put it in the holes of other voles. The scared male voles had soaked the bedding in alarm pheromones. And what happened? The females in the other holes, who had not seen a weasel themselves, bore more young under the influence of the smell of the frightened male. These females had an average of two more young – six instead of four – than the control group that had not been exposed to the pheromones.

The researchers haven't established how this works. It might be that the females mate more. Matson: 'Voles are induced ovulators, which means they have more babies if they mate with more males.' But it is also possible



PHOTO: ALWIN HARDENBOL

▲ Bank voles react to alarm pheromones of others of their species by producing more offspring.

that the pheromones have a direct influence on ovulation.

Matson is surprised by the outcome. 'We actually expected that the voles would forage less if they were frightened. Then they would get less to eat, and their condition would suffer, in which case you would expect them to produce fewer offspring, not more.' He thinks that in

this case, the long-term evolutionary advantages outweigh this short-term effect. 'It is possible that the mothers have more babies if there is a big risk of their being eaten up soon. If they don't have long to live, it is better to invest as much as possible in reproduction. We see the same thing in sticklebacks and certain birds.'

TL



PHOTO: OSCAR BOS, WAGENINGEN MARINE RESEARCH

RELIEF OF THE REEF

Marin van Regteren, a PhD candidate in the Aquatic Ecology and Water Quality Management chair group, swims the length of a 50-metre tape measure that has been installed on the Saba Bank, a submarine plateau close to the island of Saba in the Caribbean Sea. Every five metres, she notes the height of the coral reef, thus mapping its relief. This provides information about the complexity of the reef, or how many hiding places it offers animals. Van Regteren is one of the WUR researchers who joined a research expedition to the Saba Bank last month. She came back on 25 November. TL

USING 'WILD GENES' TO BREED ROBUST LETTUCE

Wild lettuce varieties contain more healthy nutrients and are often more resistant to diseases and pests than commercial varieties. Plant breeders can benefit from this when they seek to breed healthy, tasty and robust lettuce, shows a study by Wageningen Plant Research.

The plant researchers grew 150 lettuce varieties from the gene bank of the Centre for Genetic Resources, the Netherlands (CGN). These included commercial varieties such as *Lactuca sativa*, and wild varieties such as *Lactuca virosa*, also known as poison lettuce. This lettuce variety produces a lot of bitter substances, which probably contribute to its resistance to diseases and pests, but it is also slightly poisonous for humans.

For all the 150 lettuce samples they grew, the plant researchers created metabolite profiles, which give an overview of all the plant's components. 'Of the 2000 substances, we only know what about 10 to 15 per cent of them are, and we know even less about what they do, exactly,' says researcher Ric de Vos.

With that knowledge, the researchers can make connections – between the presence of certain components, for example, and the lettuce's resistance to downy mildew, a fungal pest that is a serious threat to lettuce cultivation. 'Our research shows that this re-

sistance is probably based on a combination of components,' says De Vos. Further research should reveal which combination works best. 'After that, breeding companies may be able to breed specifically for those metabolites so as to develop more resistant lettuce varieties.'

The variation in metabolites between the different lettuce varieties is great. The vitamin C level varies enormously, for instance, says researcher Robbert van Treuren. 'In the lettuce varieties we eat there is relatively little vitamin C, but in closely related wild varieties, there is a lot. There is also a big variation in levels of flavonoids, which can protect the plant from stress caused by UV rays and insect damage.'

In general, the wild lettuce varieties contain more varied components, and in higher concentrations, than the lettuces we eat, notes Van Treuren. 'We can now cross-breed that variation into the cultivated lettuce.' He is mainly thinking in terms of breeding in disease resistance, but metabolites can also play a role in tolerance of drought and salt, says De Vos.

The knowledge about the components of lettuce varieties will be useful in the new project LettuceKnow, in which Utrecht and Wageningen researchers aim to develop healthier, more stress-proof lettuce varieties. **RS**



▲ Researchers at Wageningen Plant Research grew 150 lettuce varieties from the gene bank at the Centre for Genetic Resources, the Netherlands.

VISION

Peat is subsiding faster than map shows

The ground level in the west of the Netherlands is dropping by five millimetres per year, shows the new Land Subsidence Map recently presented by the Dutch Centre for Geodesy and Geo-informatics (NCG) and the Technical University of Delft. But that is an underestimation, says peat expert Jan van den Akker of Wageningen Environmental Research.

Is the map wrong?

'It is to do with the measuring method. The data on land subsidence are based on satellite measurements. The satellite measures using radar reflections from fixtures such as a gutter or a road surface. That gives a good impression of the subsidence in built-up areas, but there is little reflection from grasslands. So the map does not give an accurate impression of the situation in the peat meadows. There, we measure at measuring points resting on firm sandy layers. In the 'Green Heart' in the middle of a ring of major cities, you get soil subsidence of a full centimetre per year in the peat meadows.'

Did this year's dry summer have an impact?

'There are big fluctuations over time. Peat is a sponge. In the spring it is very wet, because it has had the whole winter to absorb water. Over the summer, the groundwater level drops to below that of the ditches, and the peat usually dries up and shrinks by a couple of centimetres. But last summer, the groundwater level dropped to depths of one metre at times, and that made the soil in the peat meadow area drop by 10 centimetres in places. Especially in the middle of plots, because they are furthest from the surrounding ditches. The hotter and drier it gets, the more peat oxidizes in the air, the more CO₂ is released, and the more the soil subsides.'

Can anything be done about it?

'The most obvious option is to raise the water level in the ditches. But that is unacceptable to the farmers, because during wet periods neither cows nor machines can go into the fields. An alternative is to drain the land with underwater drains, which bring the groundwater level to that of the ditches. We have been experimenting with that since 2013.' **RK**



PHOTO: NOS

SPOTTED WING DROSOPHILA IS SURVIVOR

The spotted wing drosophila, a fruit fly, can survive longer in spring than had been thought. They start swarming around orchards early, waiting for ripe cherries in which to lay their eggs. So growers need to put up netting sooner, according to a Groningen-Wageningen study.

In a project funded by the Dutch Organization for Scientific Research (NWO), researchers at Groningen and Wageningen studied the habits of *Drosophila suzukii* in spring. The flies become active in March, when temperatures rise above 6 to 7 degrees, but they have to wait until late May or early June before there is enough summer fruit for them to lay their eggs in.

The researchers discovered that some of the fruit flies laid their eggs in the intervening period in the Japanese laurel (*Aucuba japonica*), a decorative plant that bears fruit in early spring. But this produced few offspring, which were not responsible for the damage to the cherries in May, the scientists discovered. They were able to distinguish between the adult, darker flies and the lighter coloured flies that emerged in the *Aucuba* in spring. They found that the cherry trees were damaged by the darker flies that survived the winter rather than the lighter coloured offspring.

'The female spotted wing drosophila flies that emerge in the autumn are capable of surviving until June,' says Herman Helsen of Wageningen Plant Research, who was involved



▲ Cherries damaged by the larvae of the spotted wing drosophila.

in the study. 'Their metabolism is low in the winter and they live off their stock of eggs and other non-vital body parts in order to survive. In the spring they survive on yeasts and sugars, for example in nectar. They wait until the cherries appear for their egg laying.'

The study gives fruit growers important information, concludes Helsen. 'The growers

need to be aware that the flies are waiting for the first cherries to ripen. The flies roam the countryside for months before then. Fruit growers use insect netting to keep the flies out, but they need to put up that netting sooner, long before the cherries start to ripen. The growers need to prevent the initial damage; otherwise the number of fruit flies will explode.' **AS**

PHOTO: HERMAN HELSEN

IT IS ENOUGH TO THINK YOU ARE DRINKING ALCOHOL

If you drink alcohol-free beer thinking it is ordinary beer, the effect on the reward centre in your brain is the same as when you really do drink ordinary beer. This finding comes from a study by Human Nutrition published in *Chemical Senses*.

The study was carried out among 21 young men aged between 18 and 35 who are regular beer drinkers. Human Nutrition researcher Paul Smeets and colleagues studied how the brain reacted when participants expected to drink alcohol. They showed them the words 'beer' or 'control' and moni-

tored their brain activity in the MRI scanner. Then, while lying in the scanner, the participants were given beer or fizzy water (the control) through tubes.

There were two sorts of beer: alcohol-free beer, or the same beer with five per cent ethanol added. The participants only knew they were getting 'beer'. The two kinds of beer caused the same amount of activity in the reward centre in the brain. 'This suggests that it is mainly the taste of beer that causes this effect. Probably because both the taste of beer and the suggestion that you are drinking beer are associated with the rewarding ef-

fect of alcohol. The famous Pavlov effect.'

Smeets has a few reservations about the results. The participants generally didn't think much of the flavour of the beer used in the test. 'That makes it harder to measure the reward effect of the beer properly,' says Smeets. 'Because right from the start, it is not experienced as rewarding.'

And of course you don't normally drink beer through a tube in an MRI scanner. The whole context contributes to creating a rewarding effect. Smeets: 'It seems it makes no difference whether there is alcohol in the beer, as long as

you don't know what you are drinking. But research should be done in a setting in which people do know what kind of beer they are drinking.' Because that too influences patterns of expectation and the reward effect. **TL**



Weekly updates about studying and working at WUR?

Subscribe to the newsletter now!
www.resource.wur.nl/newsletter

RESOURCE
 For everyone at Wageningen University & Research



PROPOSITION

‘People must learn to be self-reliant’

For her research, PhD student Juliet Mubaiwa spent a lot of her time in her home country, Zimbabwe. There she saw some negative effects of food aid in rural communities. ‘If we keep on handing out free food, a sustainable system will never be established.’

‘As a young girl I grew up in a rural area in Zimbabwe, before moving to the city for secondary and university education. So I have seen and experienced both rural and urban life. Many sub-Saharan countries like Zimbabwe receive food aid, from both non-governmental organizations (NGOs) and the government. This is meant to reinforce food security, mostly during the lean season. But a constant supply of food aid has the adverse effect of causing the agricultural sector to shrink, which might actually aggravate food insecurity in the long-term. I therefore argue that food aid does more harm than good. Just to be clear: I’m not talking about food aid that is provided in times of acute need, such as war-

time or natural disasters. I’m talking about sending grain to the same area, year in, year out, with no specific end goal in sight.



Juliet Mubaiwa got her PhD on 14 November for her thesis on improving the utilization of indigenous legumes, such as Bambara groundnut and cowpea, in Zimbabwe.

For my research I worked closely with people in the rural communities and talking to them I noticed a dependency syndrome. People know when food aid is coming, and even plan their calendar accordingly. Some households still cultivate crops like maize, which need quite a lot of water compared to some of the drought-resistant indigenous crops. There is no incentive to increase production of crops that do well in their area because it doesn’t matter whether their crops succeed or fail, because they know they will get food anyway. This dependence makes people more vulnerable to political manipulation.

People need to learn to be enterprising and self-reliant. For example if you cannot grow maize, you could perhaps grow Bambara groundnuts, cowpeas or another suitable crop, then trade them for other crops that don’t grow well in the region. If we continue to give free food handouts, we will never create a sustainable system. Instead, aid should focus on other aspects such as knowledge about farming, processing or storage of food.’ TL



Plants and trees will keep cities of the future cool

Vegetation as air con



Things can soon get pretty unpleasant in cities on a hot day. And then trees and shrubs in the right places help us keep our cool. Landscape architect Wiebke Klemm studied how you can make the most effective use of urban vegetation. Good to know now the earth is warming up.

text Roelof Kleis illustration iStock/Shutterstock photos Wiebke Klemm

A warm summer's day cheers everyone up. Ah, the sun! Lovely. Until warmth turns into heat and starts to become unpleasant. Then every strip of shade is precious. Cities can get especially torrid. The hot, dry summer in the Netherlands this year is still fresh in our memories. Well, get used to it. Thanks to climate change, that sort of summer is going to be quite common.

MICROCLIMATES

Vegetation can help to keep life bearable, though. Trees provide shade, so the more trees, the more shade. At least, that is the case if you do it properly, is the message from Wiebke Klemm, a recent PhD graduate in Landscape Architecture. Her thesis, entitled *Clever and Cool*, describes her study of how people experience microclimates in cities, and offers practical design guidelines based on her results.

The guidelines are an original move. Klemm: 'Many research papers in the field of urban meteorology end with a conclusion and the comment that the knowledge gained could be applied in design practices. I went a step further and translated my findings into practice by

drawing up and testing design guidelines. It was important to me to do that.'

THERMAL COMFORT

A central concept in Klemm's research is thermal comfort. 'A thermally comfortable or heat-proof city is one in which it is pleasant for people to be outdoors all year round,' is her definition. 'So it's a city in which you don't suffer as a result of conditions such as excess heat or radiation, but can enjoy the positive sides of them.' The original meaning of thermal comfort is a pleasant temperature. 'The term comes from interior design, originally: how people experience the thermal conditions in a room. So it's about objective parameters such as air temperature, solar radiation, heat radiating off surfaces, atmospheric humidity and wind. But there is a subjective, psychological side to how we experience temperature, too. How you experience temperature depends on things like your age, your clothing, your activities and your preferences.'

Up to now, scientific studies have mainly looked at the effect of vegetation on heat in objective terms, says Klemm. 'Only in recent years has that subjective side been looked at too.

CLIMATE ADAPTATION AGREEMENT

The Netherlands intends to get serious about adapting to climate change. The national government, provinces, municipalities and water boards signed an agreement two weeks ago to invest 600 million euros over the coming years in climate-proofing both the cities and the countryside. The emphasis lies on coping with flooding and drought. But making cities heat-proof is mentioned explicitly in the agreement as well.

How do we feel about heat, and how do we deal with it? This is interesting information for a landscape architect. We want to design cities that do justice to the human dimension and enable people to enjoy the space and use it in their own ways. We want the space to meet their requirements.'

PARK VISITORS

One of the research methods Klemm used was observation. With the help of students, she obtained a detailed picture of the behaviour of park visitors in Wageningen and Utrecht (see



▼ Wiebke Klemm illustrated her guidelines on urban vegetation with drawings and photos such as these, showing street vegetation of different heights. This improves pedestrians' subjective experience of the temperature.



ILLUSTRATION: ADRIE VAN 'T VEER



inset). Where do visitors go and sit or lie down on hot summer days? How is the park used at different times of day and days of the week? Klemm had a stroke of luck: there was a heat wave during her fieldwork period in July and August 2013. 'A gift, because it meant I could show what happens on extremely hot days, which will be more common in future, with global warming.'

The study revealed, for instance, that the tipping point from pleasant warmth to uncomfortable heat lies at around 26 degrees Celsius. Above that temperature, people start opting for shade rather than sun. Not really breaking news, agrees Klemm. 'There is a lot in this thesis about general beliefs, things we all actually pretty much know or guess to be true. The science of the obvious, you might say. We all know that vegetation provides cooling. But I wanted to quantify these things in my thesis.'

FREEDOM OF CHOICE

Klemm distilled a rule of thumb from all the spying on park users. An ideal park should have 40 per cent full sun, 40 per cent full shade and 20 per cent partial shade. These ratios best cater for the preferences of park users. But she makes clear this is only a rule of thumb. 'It's about generating options. I think freedom of choice is very important. If there are several options, you are already well on the way to a heat-proof space. You need to realize that shade is most important in the hottest hours of the day. So make sure the shade from trees and buildings falls where people want to sit between 12 and 3 in the afternoon.'

Klemm used her findings to formulate nine design guidelines for street vegetation, parks and green spaces in cities as a whole. Smart planting of vegetation and the creation of a variety of microclimates is the common theme run-

ning through them. The guidelines are illustrated with photos and stylized drawings. As an example: plant trees with large crowns on streets with a lot of direct sunlight. Behind this simple guideline lies the fact that 10 per cent more trees on a street lower the radiation temperature by one degree. Radiation temperature is one of the most important factors determining thermal comfort, says Klemm. 'Shade reduces the amount of direct solar radiation. And the paved area around a tree doesn't heat up as much, so less heat bounces off it.'

VARYING HEIGHTS

Another of the guidelines suggests that street vegetation should be of varying heights. This is because streets with varied vegetation in front gardens and small trees along the street are experienced as thermally more comfortable than streets with only big trees. Klemm: 'Certain aspects of the aesthetic experience of vegetation apparently influence the subjective perception of temperatures. In a street with tall trees and nothing else, you do not actually see any greenery. Not that this is an argument for replacing tall trees with smaller ones. But it does increase our understanding of how it works. Even smaller trees have an effect, although they provide less shade and therefore contribute less to lowering the radiation temperature.'

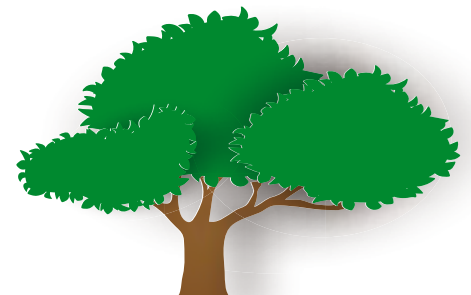
Nor do Klemm's guidelines imply that hitherto, town planners and landscape architects have just made things up as they went along. 'Before landscape architects create a design, they always start by analysing the situation. They collect data about things like the soil, the water situation, traffic and how the area is used. I argue that we should add the microclimate to all those aspects. That means analysing the sunlight, the shade and people's behaviour, and

giving thought to how you can facilitate or steer that behaviour with your design. Thermal comfort is not an end in itself, but it should be taken into account. I am all for integration. A design geared to thermal comfort should offer the benefit of keeping people cool, but it must also be pleasant and attractive to live in. People should enjoy being out of doors and making use of outdoor spaces.' 



'If there is freedom of choice, you are already well on the way to a heat-proof space.'

Landscape architect Wiebke Klemm



THE WILHELMINAPARK AND THE TORCKPARK

Wageningen's small Torckpark and Utrecht's much bigger Wilhelminapark are visually quite different. But in terms of the proportion of space devoted to trees, grass, and water, they are similar. For 12 days in July and August 2013, Klemm got students to take a fixed route through the parks at the same time of day. On a map they recorded precisely where people were sitting or lying. That provided a detailed picture of the use of the park. Interestingly, the hotter it got, the less the park was used. Klemm does not have a satisfactory explanation for that. Comparable research in Hungary showed the opposite. 'But that was on a campus with a lot of young people, who are often less bothered by heat. And there was a heat wave during my study. In that situation, whether you go outside depends partly on where you live. It might be cooler at home than in the park or on the way there.'

The Wilhelminapark in Utrecht on a summer's day. ▶



Wageningen **in'to** Languages
opens up new worlds

Employees Language Courses

Are you an employee at WUR, and do you want to improve your English or Dutch?

Our new round of courses is starting from January 21.



**Register
now!**

Dutch

Basic Dutch 1 & 2

Start Monday January 21

English

Cambridge courses
(Advanced) Speaking Skills
English Pronunciation Modules
Basic & Hospitality English
Lecturing in English


Start from wednesday February 6

'Successful academics speak their languages'

www.wur.eu/into



LIVE FROM LUMEN

The indoor garden at Lumen proved a beautiful television set on the night of Monday 3 December, when broadcaster NOS filmed a live programme called *Wat een weer* (What weather). The programme was about how climate change is drastically affecting our weather. It was a nice bit of promotion for WUR too, with key roles for weatherman Gerrit Hiemstra and weather woman Willemijn Hoebert, both WUR alumni. Wageningen scientist Tim van Hattum talked about how we can arm ourselves better against the heat using vegetation in cities (see also p.12).  RK, photo Guy Ackermans

Read the whole story
on resource-online.nl

David Kleijn argues for regional biodiversity projects

‘The meadow flowers must bloom again’



‘It’s an illusion that you improve biodiversity with national legislation’

Ecologists, farmers, water boards and provincial governments should set up 'living labs' to trial measures for promoting biodiversity in Dutch agriculture. Then they can implement the current cabinet's vision of circular agriculture, says Professor David Kleijn.

text Albert Sikkema photo Aldo Allesie

The Netherlands should become a pioneer of circular agriculture, writes agriculture minister Carola Schouten in the cabinet's vision paper on agriculture, which she presented in September. Agriculture must stop putting pressure on biodiversity, and it 'holds an important key to improving nature in the Netherlands,' says the minister.

David Kleijn, professor of Plant Ecology and Nature Management, is a prominent critic of the current agriculture system, which revolves around exports and cost price. He notes that this is causing a dramatic drop in numbers of field birds, herbal plants and insects in the Netherlands. His research has also shown that the subsidies farmers get for agricultural nature management benefit nature little or not at all. What does he think of the new agriculture vision? And how can it be implemented?

NOT JUST FARMERS

To start with, Kleijn wants to emphasize one point: 'It is too simplistic to say that the farmers are entirely to blame for the decline in biodiversity and should therefore solve it. The farmers are part of a nature-hostile system which we have all helped to bring about. Restoring biodiversity requires an integral approach. If the consumer paid a couple of cents more per litre of milk or kilo of potatoes, we could solve all the problems. And municipalities, water boards and nature organizations must start contributing to a nature-inclusive form of landscape management.'

JUST MAKE A START

Kleijn thinks the challenge for circular agriculture lies in finding a good balance between climate, the environment and nature. To find that, he argues for a regional, hands-on approach. 'For a long time I thought we should first do research to figure out the best way of protecting nature on farmland, and then use the results to formulate policy. I no longer believe that works. There are a lot of simple things we know too little about. Both nature and society are extremely complex: implementation repeatedly confronts you with surprises. It is an illusion that you improve biodiversity with national legislation. We've got to get to work at the regional level, with the farmers. Just

get started and learn as you go along – and then do it better.'

Kleijn would like to trial possible approaches in regional 'living labs'. 'Measures for nature management by individual farmer are basically pointless. If the others in the area don't join in, it isn't going to work. You need a system of nature management at the area level.' So he wants to work with farmers, rural residents and municipalities to think up and experiment with forms of nature-inclusive landscape management. He is pleased that minister Schouten also says she wants to work out circular agriculture at the regional level. 'Nature varies a lot with the context. You need different nature conservation measures in the peaty areas and on sandy soils.'

DECENT LIVING

So in the Dutch peaty areas we must prioritize raising the water table, says the professor. 'First of all that reduces CO₂ emissions and ground subsidence, so farmers will be able to go on farming longer. Secondly, a higher water table causes farmers to mow their fields later in the spring, making them better brooding areas for field birds. The challenge lies in finding a way for farmers to earn a decent living under these circumstances too.'

You need other measures, Kleijn thinks, on sandy soils such as those found in De Peel in the south of the country. Interestingly, he does not start with the farmers but with the municipalities. 'The municipal councils no longer mow the verges themselves, but contract the work out to companies with big tractors that mow all these local biodiversity hotspots at once. That is a bad idea. Phased mowing is better for biodiversity, and municipalities could get farmers to do it. They could then use the verge cuttings to improve their soils, instead of slurry. That way you can combine biodiversity with good soil management.'

HEDGEROWS


An integral approach is needed for each area, emphasizes Kleijn. 'If Dutch livestock farmers got more protein for their feed from their own land, we wouldn't have to import so much soya, which would be good for nature in countries such as Brazil. You can reward that. But if you focus exclusively on that, livestock farmers might end up fertilizing their grasslands even

more heavily, and mowing them more frequently, which is disastrous for the field birds. If there is a subsidy for herb-rich grasslands, farmers will make more considered decisions that benefit biodiversity as well.'

At the same time, you need to give farmers a nudge in the right direction by changing legislation, says Kleijn. In that respect, he argues for protective legislation for hedgerows and channel banks, which are important for birds and insects. 'The funny thing is that the Netherlands doesn't count hedgerows for the per-hectare subsidy under European agricultural policy. Farmers get subsidies for their farmland, not for the landscape elements on their land. That disincentive makes farmers get rid of the hedgerows. It would be good if the minister changed that legislation.'

CUCKOOFLOWERS

The point is still, according to Kleijn, that farmers only invest in nature as part of a business model. That is why the European agricultural subsidies are important, but he mentions other options as well. The Rabobank, for example, could charge nature-inclusive farmers lower interest rates, while dairy company Friesland-Campina could reward biodiversity with a higher milk price.

The aim is to design an agricultural system which promotes biodiversity and nature conservation. Flowers are good indicators of such nature-inclusive systems, says Kleijn. The flowery meadows of the past, with their buttercups and cuckooflowers, have rapidly changed in recent decades into deserts of perennial ryegrass. Kleijn: 'We must adapt agricultural management so that meadow flowers can bloom again.' 

DELTA PLAN FOR BIODIVERSITY

David Kleijn is working on the Delta Plan for Biodiversity, with which parties such as the Worldwide Fund for Nature, the Rabobank, the Dutch Federation of Agriculture and Horticulture, and WUR want to reverse the rapid decline in biodiversity in the Netherlands. The plan will probably be presented later this month.

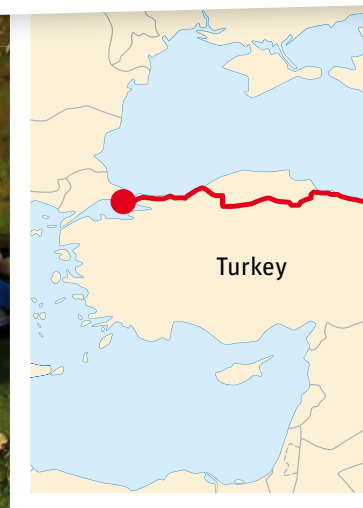
The WUR programmer who walked the Silk Road

Eight pairs of trainers and litres of tea

Taking Marco Polo as his example, programmer Bart-Jan van Rossum set off for China from Istanbul. Wearing trainers, after expensive walking boots gave him blisters. 'I gave those to an Iranian shepherd.'

text Tessa Louwerens *photo* Shutterstock and Bart-Jan van Rossum

▼ Inquisitive boys in Kyrgyzstan.



I have always been fascinated by history,' says Bart-Jan van Rossum, a programmer with the Biometris group at Wageningen Plant Research. He read 13th century explorer Marco Polo's stories and the idea gradually took shape of following in his footsteps and walking the Silk Road from Turkey to China.

He made up his mind in 2015, Van Rossum tells me over a cup of coffee in Impulse, where he gave a talk about his travels in October. 'I had been working as mathematician for a big market research bureau, and I was ready for a change.' He handed in his resignation, gave up his rented accommodation and got on the train to Istanbul. From there he wanted to walk to the Chinese city of Xi'an via Georgia, Azerbaijan, Iran, Turkmenistan, Uzbekistan, Tajikistan, Kyrgyzstan, Kazakhstan and Mongolia.

SPECIAL CART

Van Rossum set off 'pretty unprepared'. 'I had done some walking in the Alps, but never for longer than a couple of weeks. I thought, I'll see how it goes.' But, mathematician as he is, he had made an Excel file with a schedule. And he had made himself a special cart for his luggage. 'That's nicer than a heavy backpack. The disadvantage was that I couldn't take any narrow mountain paths, but the route mainly followed roads.'

The first section of the journey was tough. Within three days, Van Rossum had so many blisters that he came to a halt in a hotel in Turkey. 'I don't know exactly why, I had good walking boots, but maybe it was the long distances or the heat.' Fortunately, the hotel owner was friendly and helped him recover. He wore trainers for the rest of the trip, and got through eight pairs. 'I eventually gave the walking boots to an Iranian shepherd.'

SLEEPING IN THE MOSQUE

Hospitality was a recurring theme during Rossum's journey. He could sometimes be invited for tea 10 times in one day. Or maybe for beer, vodka or kumuz, slightly fermented horse milk. 'That is funny. Most of the people are Muslims, but the culture is more Russian, especially when it comes to alcohol consumption.'

The fact that he hardly spoke the local languages at all was not much of a hindrance. 'At some point I knew enough words to say where I came from, where I was going, how old I was and what my job was. In combination with some gesturing, that usually provided enough conversation material for at least one cup of tea.'

'The traffic is probably the biggest danger in Iran'

Van Rossum took a tent along but he usually stayed with people, in mosques, or even in first-aid posts. 'In Iran, these posts are used to put up travellers for the night.' The most interesting accommodation he stayed in was a yurt, a traditional round tent, in Kyrgyzstan. 'It turned out there was a festival of some kind, and people came trickling in throughout the evening. Alcohol flowed freely and it got more and more crazy. Then everyone went off, rolling drunk. I had no idea what they were celebrating, but it was certainly fun.'

WILD DOGS

Van Rossum never once felt unsafe. 'When I told people I was going to walk through Iran, their first reaction was, is that a good idea? But it was fine. The traffic is probably the most

dangerous thing in Iran. Apparently there are about 20,000 deaths on the roads there every year, and some people seem to do their best to push that figure up.' Something else that scared him was the wild dogs he encountered. 'I was bitten once in Ethiopia and had to go home because I could have contracted rabies. I've been scared of dogs ever since.'

Because he only had a 30-day visa for most of the countries he passed through, Van Rossum walked an average of 35 kilometres a day. 'You get into a kind of rhythm. I walked for eight to ten hours. When it got dark, I put up my tent and read a bit. I think I read 120 books on my e-reader.'

NO VISA

In the end, Van Rossum had to cut short his trip because he was refused a visa for China. And so, after about 9000 kilometres, he ended up in September 2016 in Almaty, Kazakhstan. 'Initially I wanted to go home. But I thought it was a pity to stop at such a low point.' So he decided to travel on to South Korea and Taiwan, and do some more walking more there. 'It was nice to end on a positive note.'

Van Rossum flew back to the Netherlands in December 2016, and has been enjoying his job as a programmer at WUR since April 2017. But that does not mean travelling is a thing of the past. He has just come back from Nepal, where he walked for five weeks.



◀ Bart-Jan van Rossum has a cup of tea in Iran.



▲ Van Rossum stops for a chat in Tajikistan.

▲ Van Rossum covered about 9000 kilometres between Istanbul in Turkey and Almaty in Kazakhstan. He was refused a visa for China.

REAL MEN MUST HAVE MEAT?

A barbecue loaded with spareribs and chops is said to make the average Dutchman feel manlier. So the Netherlands Nutrition Centre Foundation (*Voedingscentrum*) launched a campaign to encourage men to eat vegetarian now and then, using slogans like ‘never bean so happy’ and ‘get egg-cited’. Is that going to work? And is the image of men as diehard carnivores really right?

text Gina Ho and Tessa Louwerens illustration Henk van Ruitenbeek

Kees de Graaf



Professor of Sensory Science and Eating Behaviour

‘Men eat a bit more meat than women, but then they also eat more bread, milk and other products. Their energy requirements are higher. From that point of view, I think the *Voedingscentrum* overestimates the difference. **The association between masculinity and meat-eating has a strong cultural basis. It goes back to our hunter-gatherer period.** For some men, eating meat is an important part of their identity and that explains their sometimes fierce reactions to meat substitutes. I think the campaign will help raise awareness but there is always a certain group that you can’t change.’

Tomas van der Heijden



MSc student of Plant Sciences

‘When we were still hunter-gatherers, it was mainly the man’s role to go out and hunt. If it wasn’t for hunting and the calories it brought in, evolution would probably have gone a lot slower. Eating meat gave us enough nutrients, and enabled us to focus on different things than foraging for berries. **In this day and age there is nothing masculine about eating meat. I’m a flexitarian: I have cut down on meat because I care about my climate footprint.** Caring for the environment shouldn’t be a masculine or feminine thing: that’s polarizing. It should be part of our humanity to care. The campaign is a funny way to promote a different diet, but I don’t think it will be very effective.’

Hans Dagevos



Sociologist of consumption at Wageningen Economic Research

‘In the advertising world, cars, beer and meat are seen as men’s products. Behind every stereotype there is a germ of truth. Research does show that men are more attached to meat.

But there are a lot of nuances, and there is a whole group of men who are very happy to do without meat. The food consumption survey done by the Netherlands National Institute for Public Health and the Environment shows that men do eat more meat, so it is logical for the *Voedingscentrum* to focus on that. But **you shouldn’t overemphasize the gender difference, because then you indirectly reinforce the link between meat and masculinity,** and you risk alienating both the meat-eaters and the flexitarians. What is more, it distracts us from the core issue: that we all need to cut down on meat.’

Louisa Aarrass



MSc student of Organic Agriculture

‘I’m mainly vegetarian but I won’t turn down meat at, say, a big family gathering. **I think this campaign by the Voedingscentrum is lame. It equates food choices with gender expression and it’s reductive:** it puts people in

boxes when it doesn’t have to. Instead of dismantling this old idea of what masculinity is, it’s actually reinforcing it. Instead, we need campaigns that excite people. Art can connect, provoke and stretch people’s imagination and it has a subtle but deep power that could actually change people’s choices, including food. Initiatives that start in the community instead of top-down have a lot of power too.’

Margreet van der Burg



Associate professor of Gender Studies

'The image of meat as macho and masculine doesn't fit the men like those in Wageningen, who are already thinking seriously about their food choices. And **I don't think the men we see as fanatical meat-eaters**

will feel the campaign is talking to them. Compared with other countries, the Netherlands is not an extremely carnivorous country – although we do produce and export a lot of meat. I think the campaign is a nice idea but I think it would be more effective to look at how meat is marketed. In the supermarket, for example, it is not easy to buy portions for just one or two people. You are encouraged to buy it in large quantities. And I think it's good to go on being "tough" by eating less meat per meal and having one meat-free day a week.'

Hanneke Nijland



Researcher in Strategic Communication

'**From an evolutionary point of view, there is an instinctive link between eating meat and strength: it gives people a powerful feeling to be at the top of the food chain.** But I think we're

past that now. From my research on motives for eating or not eating meat, it emerged that older people see meat as a status symbol. That is partly because they went through the post-war period when meat was expensive. But nowadays, with cut-price meat, the opposite is true. In our study we didn't find any big differences in the motives of men


and women. It is too simplistic to concentrate solely on self-image; it reduces men to a group that don't look beyond that. It would be better to emphasize environmental impact, health and animal welfare. Because what we want is for people to see the bigger picture, not just their own interests.'

Ted Sparkes



MSc student of Environmental Science

'The vegetarian option is not always the one with the lowest carbon footprint – for example, an apple flown over from New Zealand isn't necessarily "greener". I'm fine with animals being killed for food, as long as

they were treated humanely. People from rural areas are more likely to associate eating meat with masculinity, like the two guys I used to live with – they care more about supporting local farmers than climate change. Also, you need to be more creative with vegetarian cooking, and some people still think cooking is not masculine. Speaking for myself though, **I don't agree that being vegetarian is less masculine because I wasn't brought up with that idea.** The more educated you become about climate change, the more you realize that's a dated and narrow-minded view.' 



Welcome to the
REVOLUTION
of Bioreactors

Carlos is a student and a CEO

As if doing a Master's is not enough to keep you busy, Carlos Serrano Fajardo (24) also runs his own company from his student room. He and three friends started Remode Solutions.

'After finishing my BSc in Biochemistry at the University of Seville, I wanted to go abroad to get my MSc. I really wanted to get out of my comfort zone and to learn as much about life as possible. Then Wageningen University & Research popped up in my browser search results – which is how I ended up starting on my MSc in Biotechnology in August 2017.

In March 2018 I participated in the course New Venture Creation, in which students were asked to come up with a business idea and pitch it in one minute. I presented an idea about personalized lab bioreactors. Lab bioreactors are also known as “fermentation vessels”, which are used to ferment and produce wine or beer. But they are also used to produce pharmaceuticals, chemicals and biogas, and for treating wastewater.

FIRST BUSINESS TRIP

The jury was instantly interested and the initial course assignment evolved into a real project. My team developed the concept and by working very hard we got the chance to pitch our idea for a student loan in order to launch

our company. We got the loan and suddenly we were registering our own company as Remode Solutions, of which I am now CEO.

In Remode Solutions we give a boost to research in biotechnology by speeding up the fermentation process which happens naturally in nature. This process usually takes up to three months, but with our technology it takes a matter of days.

'My house has become somewhat of a headquarters'

We work in a team of four people: myself, Juan Arias, Emanuele Ribatti and Roland Berdager. We have already experienced really nice moments: from celebrating our first meeting with a beer at The Spot, to our first business trip: three days in Belgium for a competition. It is wonderful to combine work, friendship and fun.

▲ Carlos Serrano Fajardo with the brand new Australian 3D printer located in his room.

TEAM SPIRIT

It is really cool to decide what kind of company you want to build, what kind of boss you want to be and what team culture you want to cultivate. My biggest challenge as CEO is managing my time in order to combine my studies, work, friends and chill time. I have no business background at all, so everything related to management, negotiations, finances, investors and legal issues is new to me. But I'm already familiar with the ins and outs of the *Belastingdienst* – the tax department – and their blue envelopes.

We recently purchased our first 3D printer. It is being shipped from Australia and it is as big as a family fridge! It's going to be interesting fitting it into my room. My house has gradually become somewhat of a headquarters.

Once I've finished my degree, my plan is to focus on Remode fulltime. We have ambitions to expand across Europe. I am thinking of staying based in the Netherlands for the time being. We get a lot of support and opportunities here.' **EvdG**

A playground for social enterprise

You don't learn entrepreneurship from a book, but by doing it. That is the philosophy of Enactus, a global student platform for entrepreneurial action to create a better world. The Wageningen branch is going great guns. 'We want to make it easier to set up small businesses that have an impact.'

In the kitchen of the former Unitas headquarters on the Generaal Foulkesweg, five people with a cognitive disability are cleaning up and shredding plastic waste to melt it into bars. These will be used to make balcony furniture. 'We create work like this for people with limited job prospects, and at the same time we give used plastic a second life,' says MSc student of Bioinformatics Koen van den Berg (21). He is one of the founders of the Wageningen branch of Enactus, as well as heading this Enactus project, which is called UniPlastic.

'Once a project gets going, it can become a separate business'

WORLD CUP IN SOCIAL ENTREPRENEURSHIP

Enactus is a not-for-profit organization active in cities with student communities in 36 countries. Most of the Dutch university cities have had a local branch for years now. Van den Berg and other WUR students established the Wageningen branch in summer 2017. The branches keep in touch and help each other out. But they also compete with each other once a year in a national competition, the winner of which goes on to the Enactus World Cup. Enactus Wageningen already has 31 members, who between them have a variety of ideas for sustainable small businesses. Three of these ideas have already resulted in actual projects such as UniPlastic.

Not that Wageningen students with an entrepreneurial bent had nowhere to go before Enactus came on the scene, says Van den Berg. 'There is StartHub, of course, but that focuses mainly on helping Master's and PhD students build up a



Enactus Wageningen founder Koen van den Berg and chair Simone Penris in the former Unitas building, where people with a disability recycle plastic under supervision.

PHOTO: SVEN MENSCHER

profitable business. We concentrate on Bachelor's students and on social entrepreneurship.' There should be easily accessible opportunities to learn entrepreneurial skills, adds Simone Penris (21), an MSc student of Food Technology and currently chair of Enactus. 'We are a kind of playground for learning entrepreneurship. It is not a problem if something goes wrong, because you learn most from your mistakes.'

INSECT BROWNIES

The members of Enactus get together every Thursday evening in the town 'living room' Thuis, to see how to take their projects to new levels. The goal of these projects is to have an impact. 'Impact on social issues of sustainability, for instance,' says Van den Berg. As an example, the students behind Insect Impact try to lower the threshold for eating insects by developing baking mixes for mealworm brownies. 'The idea is that insects are a more sustainable source of protein than meat, but that people are still scared of eating insects,' says Penris. 'By making a brownie mix with them, you make it

easier for people to sample insects as food.'

The third Enactus project, Locus, seeks to solve two problems at the same time: shortage of accommodation and loneliness. Penris: 'Many elderly people are lonely and many students have trouble finding rooms. Locus works as a matchmaker, matching students looking for rooms with lonely elderly people.' Locus is still searching for the right approach but has already made one match: a WUR student moved in with an elderly man on 1 December.

'Enactus Wageningen has only just got started and is still quite small,' says Van den Berg. 'In other cities you can see that once a project gets going, it eventually cuts loose from Enactus and becomes a separate business. And that's the ultimate aim, of course: to create something that is sustainable and keeps on going.' **RLZ**

For more information see www.enactuswageningen.nl.



ZOMBIE SPIDER

Researchers from the University of British Columbia have found a parasitic wasp in the forests of Ecuador which turns spiders that live in colonies into zombies. The wasp's larvae attach themselves to the spider and take control of it. The spider leaves the colony and makes a cocoon for the wasp. Once its house is ready, the larva gobbles up its host. That's gratitude for you.

SPIDER BREASTS

More news about spiders. Chinese researchers have discovered a spider with breasts. The arachnid in question is the *Toxus magnus*, an ant-like jumping spider found in China. After giving birth, the mother spider produces a nutritious fluid from an organ formed for the purpose. The baby spiders are fed like this for about 40 days. The spider breasts are not to be confused with spider nipples. Cobwebs come out of those.

DISHWATER

Wageningen nutrition researchers have discovered that the reward centre in the brain doesn't differentiate between beer with or without alcohol. They conclude from this that the difference between the two drinks is purely a matter of taste. Which just happens to be precisely why beer drinkers choose alcoholic beer and not alcohol-free dishwater. It's the taste, stupid.

GAMBLE

People gamble more when they're in a good mood. When the sun comes out after rain, for instance. Or after their favourite football club has won during injury time. Scientists at McGill University demonstrated this by monitoring the moods of residents of five American cities using twitter messages. Mood was correlated with behaviour at betting shops. A city in a good mood placed 2.5 per cent more bets.

'Intensive play' at survival running club Woest



PHOTO: SVEN MENSCHER

▲ Members of the survival running club Woest training on Bongerd's brand-new obstacle course.

Survival running club Woest is a spectacular new entrant in the Wageningen sports scene. 'There wasn't a club for this in Wageningen,' says the new treasurer Roos van der Locht, 'so we are filling that niche.'

Next to the football pitch at the Bongerd is a brand-new obstacle course where Woest now trains twice a week. 'There have been plans to build a course like this for years at the Bongerd,' explains Van der Locht. 'A design was even produced four years ago. But they had to build a new sports hall first, after which there was no money left. Some survival runners then took the initiative to build some obstacles themselves. Meanwhile, we kept on at the Bongerd about the importance of such a course.' Which got results: a professional wooden survival running course was built in November. There are also a few obstacles in between the trees next to the course.

PLAYING OUTDOORS

'At the moment we've got a core group of about 15 people,' says Van der Locht, 'but as many as 22 have turned up for training. There is a good atmosphere and we do a lot of things together so that the members can get to know one another properly and the lessons aren't just anonymous.' A training session

lasts about 90 minutes and consists of various elements: running, stretching, training on obstacles, competitive aspects and a game at the end. 'Tag, for example. It's basically intensive outdoor play for 90 minutes,' laughs Van der Locht.

You take part in survival running competitions on an individual basis, says Van der Locht. 'Some members compete. We also go to runs as a Wageningen delegation. We went to a run in Belgium a couple of weeks back and in the spring we're planning to compete in runs in Zeist and Elst.'

TREE PUSHERS

Van der Locht thinks it's strange that Wageningen didn't already have a survival running club. 'It's really a typical Wageningen sport. It's a proper outdoor sport as you run through woods and fields where you come across various obstacles; they often involve rope climbing but sometimes you have to do archery or kayaking. Add to that the weather: snow, rain, storms. The run is never cancelled unless it's code red. You have to not mind getting dirty.' **EVK**

Curious whether survival running could be your thing? You can join three training sessions free of obligations on Tuesday or Thursday evenings. Check out woestwageningen.nl.

Sampling the atmosphere at the climate summit

The international climate summit in Katowice, Poland, started this week. Master's student Iris van Hal is there as a volunteer.

The UN's Conference of the Parties (COP) on climate change takes place in a different country every year, and aims to take decisions about implementing the climate policy. This summit in southern Poland is the 24th, and will go on for two weeks. It is attended by about 20,000 people from all around the world. 'I expect it will be very formal, with a lot of closed doors,' says Van Hal, who is taking two MSc programmes: Forest and Nature Conservation, and Development and Rural Innovation. 'As a student you don't get to attend the official activities, nor, alas, to bring Trump his coffee. My main reason for going is to sample the atmosphere, which I think will be very inspiring and high-energy. I shall also go to side events such as film screenings, so as to join the conversation about the topics under discussion.'

The last time the COP was in Poland, in 2013, there was a big demonstration and green organizations such as the WWF quit the talks. 'I don't expect that now,' says Van Hal. 'They've got to talk to each other now. It is important that good agreements are made, especially now, after the election of controversial presidents in Central and South America. And besides, there are still concerns about the impact of climate change.'

Every year, the UN climate summit raises questions – about the pollution caused by all the participants' flights, for example. Iris thinks there is no other option at the moment. 'It is important to get together. I think the COP would be better off focusing on improving the event itself, because massive amounts of resources are probably wasted there.'

How is Iris getting to Poland herself? 'Must we talk about that?' she asks with a laugh. 'They have come up with a new word for this, and it might have a chance of being the Word of the Year: flying shame.' **Evk**



PHOTO: TESSA LOUWERENS

▲ Iris van Hal: 'I expect it will be very formal, with a lot of closed doors.'

Iris van Hal will keep a blog in Poland. Read it on stichtingruw.nl.

MEANWHILE IN... SRI LANKA

'At least the civil war is over'

Footage of fighting politicians in parliament in Sri Lanka went around the world. The country is currently without a government or prime minister. The international community is astonished, but Jayaruwan Gunathilake is not surprised.

'Political drama like this is not new to me; it has been happening for years in Sri Lanka. I think it is getting international attention now because the president dismissed the prime minister and appointed a new one. I am not surprised about that, and I feel like anything is possible in Sri Lanka. For example, it is common for members of parliament to change sides. I think people tolerate a lot because of the civil war that ended only nine years ago. Despite the political situation, people are grateful that at least the war is over. So I don't think much will change in the coming time.

When I discuss politics with my friends, we usually do it online. I try not to get involved in the current discussions, though. I think it is pointless and I often get the comment: "You don't live here anymore.

Why do you care?" usually use international sources to follow the news from Sri Lanka. The sources from the country it-



▲ Members of parliament come to blows in Sri Lanka.

self are mostly biased. I am interested in what's going on at home but I don't think about it all the time. It has been eight years since I left Sri Lanka. As I am living abroad, I cannot vote. Going back to Sri Lanka would probably be a bad choice in terms of career for me. I do not think there would be suitable jobs for me back home. A lot of young people are leaving the country to get higher education and work abroad.' **JS**



Jayaruwan Gunathilake is a PhD student in Organic Chemistry, from Sri Lanka. He reflects on the situation in his home country.

YOU ON CAMPUS

Esther Westervelt (24) is sitting at the window in the Leeuwenborch with ear plugs in. She is in her second year of the MSc in Management, Economics and Consumer Studies, and is currently writing up her thesis.

Esther does not see herself as very stress-prone but writing a thesis is creating a bit of tension. 'If I get very stressed, I go and get some exercise. I like running and football. If I want to recharge, I do so by going for a country walk. I'm not the meditation type. I tried it, but I feel as though I'm forcing myself not to think about anything and it doesn't work.'

Esther took a gap year between her Bachelor's and her Master's. 'I still didn't know which Master's I wanted to do and a friend and I decided to go travelling.' She was an au pair for a while for a family in Australia.

'Mainly I was there as a helping hand in their day-to-day life, and as company. I cuddled the baby and played with the older children, a boy of six and a girl of five.'

'It may be a cliché, but I did learn a lot about myself through that gap year. You really are on the other side of the world. And the differ-

'It may be a cliché, but I did learn a lot about myself through that gap year'

ent time zones make contact with home quite a lot harder, too. As a result you are thrown back on your own resources. Not that I felt lonely, not at all, but I really did have to make certain decisions myself. On the other hand, that makes you choose what you want yourself.



PHOTO: EVA VAN DER GRAAF

You don't need anyone else's approval.' Esther's plan is to take a break from her studies once she has handed in her thesis, and work for a while before she does her internship. 'Then I can earn some money and apply for internships. I'd like to go back to Australia. Purely because of the country: the atmosphere, the mentality and the beautiful nature. It will probably be a marketing internship with a food company. And if they offered me a job afterwards, I might stay on.' **EvdG**

Five good habits I picked up from the Dutchies

Some international students are intimidated by the infamous directness and strictness of the Dutch. Not blogger Kaavya Raveendran.

1. DIRECTNESS

Although many people find the "direct" attitude of the Dutch too harsh, I personally really appreciate it. I am an overthinker and I often tend to read too much between the lines of what others say. But in the past year, my brain has been quite relaxed as I haven't had to waste my mental energy decoding how others respond to things related to me or my work. Because what the Dutch say is what they really mean. Direct and

straightforward. A no-drama zone.

2. PRIORITIZE

It is quite surprising that what I failed to learn in the previous 21 years, in spite of trying, I have learnt in the last year. I have learnt to say "NO"! This was something I was terrible at in India, where people will either judge or misunderstand you when you say this two-letter swearword. But the people of Holland understand and respect your choice without you having to give a reason.

3. HONESTY

I would say if someone had to confer an award for ethics, the Dutch would win, hands down. They have miraculously high morality. Their

words and commitments are like indestructible bonds. Have you seen people jogging despite pouring rain? That's their commitment right there. Whether it is the self-checkouts at the supermarket or completing your hours at work. The trust and faith they have in each other is awesome. It is as though honesty runs in their blood.

4. SUSTAINABILITY

Reacting to what really matters and thinking ahead is typical of a Dutchie. This attitude motivates them to adopt and stick to more sustainable ways of living. As many people know, the Netherlands is actually below sea level, and yet the country continues to function at its

BLOG



Kaavya Raveendran is an MSc student of Food Technology. You can read all of her blog on resource-online.nl.

best. This is all a result of acting and reacting in advance. Better safe than sorry!

5. PUNCTUALITY

Being on time was always important to me, but here I can actually start things on time because everyone will be there. The punctual part of me has been so happy since I have been in Holland. (One tip: don't ever be late, but if you are, bring cake. The Dutch people love it so much they'll probably forgive you.) **E**

Wageningen Master's students do internships and thesis research all around the world, getting to know their field and other cultures. Here they talk about their adventures.

Do Tasmanian farmers want to irrigate?

'Tasmania wants to earn more from agriculture. The main focus of the agricultural policy is therefore on improving irrigation so that higher value crops can be grown too, which are more water-dependent. For my thesis, I looked at the potential consequences of that policy between now and 2050. I talked to farmers to find out what they think of the plans.

PREDICTING BACKWARDS



For the interviews I used the "backcast" method, which involves looking back from a predicted future point on how you would have got there. If you use the forecast method, people often extrapolate from how we do things now, which gets in the way of creativity. The backcast method proved suitable for identifying potential advantages and disadvantages. The farmers believed that improved irrigation could be economically attractive, but they were scared of becoming dependent on the irrigation system. And for some farmers it was also difficult to make such a big about-turn. Lastly, it would change the landscape drastically, which doesn't always please local residents.

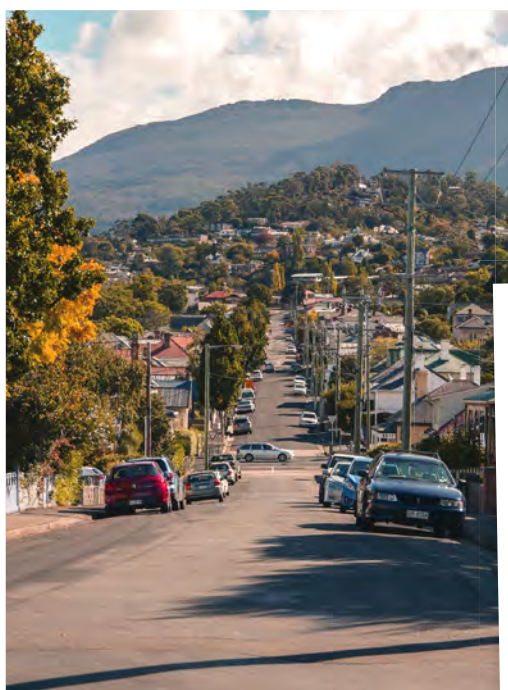
INTO THE BUSH

I was able to stay with a family for the first three weeks. That was very nice; I felt just like their son. Eventually I found a room closer to the university. I didn't have a lot of contact with my housemates, but spent more time with my supervisor, who is doing his PhD in

Tasmania. I went out a lot with him and his friends, taking a tent and going into the bush by car. There is still a lot of primeval forest in Tasmania, and it was great to see that.

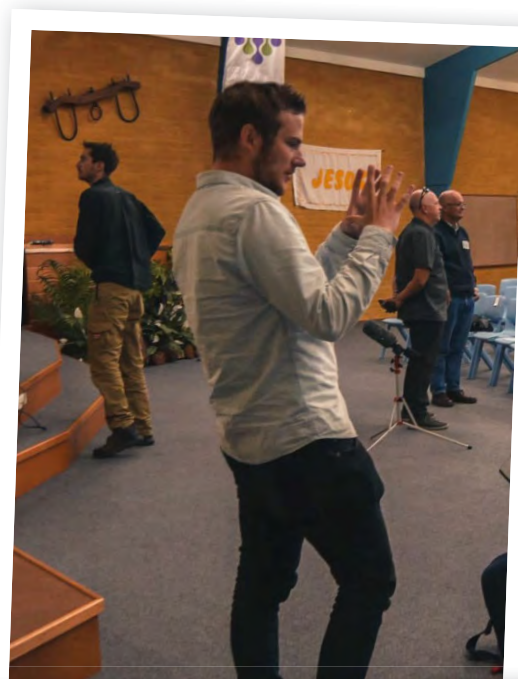
AMERICAN

In terms of culture, Tasmania is like America. People higher up the hierarchy are sticklers for detail, so they watch what they say. Something else I realized was that people are quick to show enthusiasm and say yes, but then they forget an arrangement just as quickly. People are very friendly to each other and treat each other as one big family, but at the same time, professionally, everyone does their own thing. Collaboration is not really the norm there yet.'   FJ



THE WORKS

Who? Mees Arkesteijn, MSc student of International Land and Water Management
What? Thesis research on the impact of agricultural policy targeting irrigation
Where? Hobart, Tasmania



More interviews
on resource-online.nl

Forum - Irregular Opening Hours Christmas Holidays 2018/2019

	2018/2019	The Building	The Library	Student Desk	IT Service Point	WURshop	Restaurant	Grand Café	Wageningen in'to Languages
Friday	21 December	8 am - 10 pm	8 am - 10 pm	10 am - 12 pm	9 am - 12 pm	9 am - 2.30 pm	11.30 am - 1.30 pm	9 am - 2 pm	9 am - 5 pm
Saturday	22 December	10 am - 6 pm	10 am - 6 pm	Closed	Closed	Closed	Closed	Closed	Closed
Sunday	23 December	10 am - 6 pm	10 am - 6 pm	Closed	Closed	Closed	Closed	Closed	Closed
Monday	24 December	8 am - 8 pm	8.30 am - 5.30 pm	Closed	Closed	Closed	Closed	Closed	Closed
Tuesday Christmas	25 December	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Wednesday Christmas	26 December	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Thursday	27 December	8 am - 8 pm	8.30 am - 5.30 pm	Closed	Closed	Closed	Closed	Closed	Closed
Friday	28 December	8 am - 8 pm	8.30 am - 5.30 pm	Closed	Closed	Closed	Closed	Closed	Closed
Saturday	29 December	10 am - 6 pm	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Sunday	30 December	10 am - 6 pm	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Monday	31 December	8 am - 8 pm	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Tuesday New Years Day	1 January	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Wednesday	2 January	8 am - 8 pm	8.30 am - 5.30 pm	Closed	Closed	10 am - 2 pm	11.30 am - 1.30 pm	Closed	Closed
Thursday	3 January	8 am - 8 pm	8.30 am - 5.30 pm	10 am - 12 pm	10 am - 12 pm	10 am - 2 pm	11.30 am - 1.30 pm	Closed	Closed
Friday	4 January	8 am - 8 pm	8.30 am - 5.30 pm	10 am - 12 pm	10 am - 12 pm	10 am - 2 pm	11.30 am - 1.30 pm	Closed	Closed
Saturday	5 January	10 am - 6 pm	10 am - 6 pm	Closed	Closed	Closed	Closed	Closed	Closed
Sunday	6 January	10 am - 6 pm	10 am - 6 pm	Closed	Closed	Closed	Closed	Closed	Closed

During working hours, the building is open to the public. After working hours, entrance is only possible with a WUR card.



Orion Irregular Opening Hours Christmas Holidays 2018/2019

	Friday 21 December	Saturday 22 December to Sunday 6 January
The Building	8 am - 6 pm	Closed
Bike basement	8 am - 8 pm	Closed
The Spot	11.30 am - 1.30 pm	Closed
Restaurant	8 am - 4 pm	Closed



Leeuwenborch Irregular Opening Hours Christmas Holidays 2018/2019

	2018/2019	The Building	Coffee Bar/ Restaurant	The Library
Friday	21 December	7 am - 6 pm	8 am - 5 pm	8.30 am - 5 pm
Saturday	22 December	8 am - 5.30 pm	Closed	Closed
Sunday	23 December	Closed	Closed	Closed
Monday	24 December	7 am - 6 pm	Closed	Closed
Tuesday Christmas	25 December	Closed	Closed	Closed
Wednesday Christmas	26 December	Closed	Closed	Closed
Thursday	27 December	7 am - 6 pm	Closed	Closed
Friday	28 December	7 am - 6 pm	Closed	Closed
Saturday	29 December	8 am - 5.30 pm	Closed	Closed
Sunday	30 December	Closed	Closed	Closed
Monday	31 December	7 am - 6 pm	Closed	Closed
Tuesday New Years Day	1 January	Closed	Closed	Closed
Wednesday	2 January	7 am - 10.30 pm	10 am - 2 pm	Closed
Thursday	3 January	7 am - 10.30 pm	10 am - 2 pm	Closed
Friday	4 January	7 am - 10.30 pm	10 am - 2 pm	Closed
Saturday	5 January	8 am - 5.30 pm	Closed	Closed
Sunday	6 January	Closed	Closed	Closed

After 6 pm entrance is only possible after registration at the reception desk.



Announcements

ALLOTMENT ASSOCIATION IMAG-DLO

The allotment association IMAG-DLO on the Grintweg has room for a few new members. Are you interested in taking up gardening, a hobby that's both healthy and handy? More info from r.l.devries@hetnet.nl / tel: 0318 414942.

WUR ARTISTS WANTED

Are you an artist as well as a student or staff member at WUR? The WUR library offers exhibition space in the display cabinets on the third floor of the Forum. A unique opportunity to exhibit your work (free of charge) to a broad audience: 300-500 students come to the library every day. Our preference is for three-dimensional art, but we are open to other artistic forms as well. Interested? Email monique.braakhuis@wur.nl

Agenda

Thursday 6-20 December

FILM HOUSE MOVIE W

Tesnota: A Russian drama about a Jewish family in danger of being torn apart by the kidnapping of the son and his fiancée. *The Sisters Brothers*: A black comedy and eccentric western with an all-star cast, set in the time of the gold rush. *Broeders*: a special screening with an introduction and a Q&A afterwards with the director/producer Germen Boelens. The film narrates two Moroccan brothers' dangerous quest to find their youngest brother, who went missing in a refugee camp. A multi-layered film which brings together the themes of family, solidarity and war, and which will stay with you for a long time. Location: Wilhelminaweg 3A, Wageningen. €6.50/€5.

MOVIE-W.NL

Sunday 9 December, 12:00-19:30

MUSIC AT THE NEIGHBOURS'

For the third time, Wageningen shows what it has to offer in terms of emerging and established musical talent. The performances take place between 12:00 and 17:00 in various living rooms around Wageningen. Local musicians (including WUR students) play music ranging from jazz

to classical, from singer-songwriter to electronic beats. Admission free. The event ends with a dinner and party in Junushof theatre. Reservation is required for the dinner. The full programme can be found on www.muziekbijdeburen.nl

Friday 14 December

NATIONAL CONGRESS BIOLOGY STUDENTS (NCBS)

During this congress in Burgers' Zoo in Arnhem, biology students from several universities will compete for 'The Darwin', a national thesis prize for biology. Buy your tickets through www.ticketkantoor.nl/shop/ncbs. Location: Safari Center Burgers' Zoo, Antoon van Hooffplein 1, Arnhem.

Friday 14 & Saturday 15 December, 20:00

WSKOV WINTER CONCERTS

The Wageningen Choir and Orchestra Association has prepared some amazing pieces for this season. The choir, conducted by Krista Audere, will sing a programme of pieces by Dov Carmel and Morten Lauridsen.

Our orchestra, conducted by Frank Adams, will perform Symphony no. 4 by the Danish composer Niels W. Gade, and *Masques et Bergamasques* by Fauré. Together, the choir and orchestra will perform *Hirtenchor* and *Jägerchor* by Schubert, and *Pavane* by Fauré. Venue: Friday: Johannes de Doperkerk, Bergstraat 17. Saturday: Market church, Markt 1 Wageningen. Tickets via www.wskov.nl or at the door.

WSKOV.NL/CONCERTS

Friday 14 December, 20:30

MINICULTURE WAGENINGEN PRESENTS: MECHANICAL ECSTASY

A temporary club in Junushof Theatre, so you can lose yourself in dance, music and more, with swinging dance music and players from Slagwerk Den Haag, who play electronic tracks live. On the other stage there is a performance by nine dancers from international dance troupe Club Guy & Roni. Altogether, an experience that's a bit like a rave in intensity: a party that goes on after the show is over.

Wageningen **in'to** Languages
opens up new worlds

28-31 januari

Winter Boost Camps

- Pronunciation Boost – 28 januari
- Grammar Boost – 29 januari
- Presentation Boost – 29 januari
- The Power of Words – 29 januari
- Storytelling – 30 januari
- Emailing in English – 31 januari
- Meetings in English – 31 januari

Schrijf je nu in!

Geef je Engels een snelle boost!

www.wur.nl/into

Colophon

Resource is the magazine and news website for students and staff at Wageningen University & Research. Resource magazine comes out every fortnight on Thursday.

Address

Droevendaalsesteeg 4,
6708 PB Wageningen
(Atlas, building 104, bode 31).
POBox 409 6700 AK Wageningen.
Secretariat: Thea Kuijpers,
resource@wur.nl, 0317 484020
Website: www.resource-online.nl.
ISSN 1389-7756

Editorial staff

- Anton van Elburg (acting editor-in-chief)
anton.vanelburg@wur.nl, 06 5429 8594
- Lieke de Kwant (Magazine editor)
lieke.dekwant@wur.nl, 0317 485320
- Linda van der Nat (Website editor)
linda.vandernat@wur.nl, 0317 481725
- Roelof Kleis (ecology, social sciences, economy), roelof.kleis@wur.nl, 0317 481721
- Tessa Louwerens (animals, nutrition), tessa.louwerens@wur.nl, 0317 481709
- Albert Sikkema (plants, animals, organization)
albert.sikkema@wur.nl, 0317 481724
- Luuk Zegers (students and education)
luukfl.zegers@wur.nl, 0317-481233

Others who work on Resource

Guy Ackermans, Alexandra Branderhorst, Evelien Castrop, Cathy Chen, Susie Day, Corine Feenstra, Teun Fiers, Marijn Flipse, Stijn van Gils, Eva van der Graaf, Berber Hania, Anne van der Heijden, Gina Ho, Hoger Onderwijs Persbureau (HOP), Lotje Hogerzeil, Anja Janssen, Femke Janssen, Echica van Kelle, Anja Koelstra, Piotr Kukla, Helena Ligthert, Clare McGregor, Sven Menschel, Jeroen Murré, Rik Nijland, Henk van Ruitenbeek, Julia Schäfer, Inge van der Wal, Joris Tielens, Pascal Tieman, Clare Wilkinson

Design Geert-Jan Bruins, Alfred Heikamp

Translators

Clare McGregor, Susie Day, Clare Wilkinson

Printer Tuijtel, Hardinxveld-Giessendam

Subscriptions

A subscription to the magazine costs €58 (overseas: €131) per academic year. Cancellations before 1 August.

Advertising

External: Bureau van Vliet, T 023-5714745
m.dewit@bureauvanvliet.com
Internal (reduced rate): Thea Kuijpers,
resource@wur.nl, T 0317 484020

Deadline

Deadline for submissions: one week before publication date. The editors reserve the right to edit and/or shorten announcements.

Publisher

Marc Lamers, Corporate Communications & Marketing Wageningen University & Research

klimaatneutraal
natureOffice.com | NL-077-434311
gedrukt

MIX
Papier van
verantwoorde herkomst
FSC® C007225

>>TYPICAL DUTCH



ILLUSTRATION: HENK VAN RUITENBEEK


Fishing the Dutch way

Last spring, a Dutch colleague of mine asked me to join him for a day of fishing at a pond in Ommeren. Since fishing is my hobby, I accepted his offer immediately. However, I soon discovered that fishing in the Netherlands is quite different from the fishing I know.

The night before the fishing day, I went to my colleague's place. While we prepared the fishing tackle, I asked him why not many people go fishing in the Dutch rivers or canals. He answered that everybody here in the Netherlands must have a fishing pass before they go fishing in any water: rivers, canals or the sea. You can buy this pass for about 40 euros. And if you want to fish at night, you have to have an additional night-fishing permit.

He further warned me that if you catch a fish from the river, you have to put it back in the water immediately. You cannot take it home, otherwise you receive a fine. Also, there are regulations about the minimum sizes of fish that you are allowed to catch, and there is a code of conduct for handling fish before releasing them back into the water.

To me, this is really weird. Why would you buy a fishing pass and go fishing at all if you must release the fish again? It is torturing the fish, isn't it? In my country people can go fishing anywhere they want without a pass. Moreover, people can consume the fish they catch or sell them on the market, no matter the size.

Luckily, my colleague had arranged for us to go fishing at a fishpond. We had to make a reservation and pay a fee, but we did not need a fish pass. Also, we could take as many fish back home as we could catch. Happy fishing!  Eko Nugroho, a PhD student of Agricultural Economics and Rural Policy Group, from Indonesia

To me, Dutch fishing rules are weird. Why would you go fishing if you must release the fish again?

Do you have a nice anecdote about your experience of going Dutch? Send it in! Describe an encounter with Dutch culture in detail and comment on it briefly. 300 words max. Send it to resource@wur.nl and earn twenty-five euros and Dutch candy.