Open office? No thanks

'I don't like chatter and movement all around me' | **p.4 and 22** |

Bad apple

PhD candidate finds cause of mysterious fruit rot | **p.8** |

How tall is that tree?

Peek app teaches students to estimate | **p.24** |

RESOURCE

For everyone at Wageningen University & Research

no 14 - 21 March 2019 - 13th Volume





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no 14 - 13th volume



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PERSONAL HABITAT

We *Resource* editors have been sharing an open plan office for years. We have an area of about 120 square metres with 14 desks between us, the WUR video editors and the Managing Editor of Wageningen World. It can be busy, but seldom too busy. We go out of the room to have discussions, and for telephone interviews we find a quiet cubicle. I'm used to it; it's fine.

But there is no hot-desking at *Resource*. I've got my personal habitat in the form of a desk of my own. Typical features of this habitat are piles of paper, used notebooks and brand new Wageningen theses. Once or twice a year I throw half of it out to leave room for growth.

I quite understand why most WUR staff want a desk to call their own (see pages 4 and 22). They want to be able to create their own space and they do so with seemingly trivial and yet meaningful items. During interviews I always look around at what my interviewee has hanging on the walls or standing on their desk. It's quite telling. Visitors to the *Resource* newsroom, for instance, see our unique, loud lampshades and our single, languishing pot plant. And of course, my homemade partition made of 500 theses.

Albert Sikkema, science and organization editor



>> EU gender project should help WUR to appoint more women | p.4

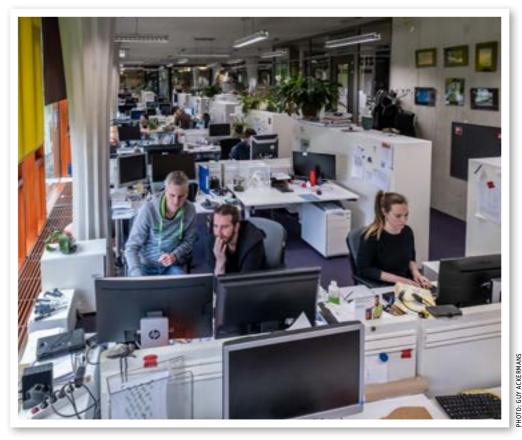
OPEN PLAN OFFICE CAUSES IRRITATION

A poll about hot-desking by the WUR Council at the end of February got a response from 656 people. Almost 90 per cent of them would rather work in a small space of their own than share a larger space. They associate hot-desking with working in a noisy open plan office.

The WUR Council sometimes asks staff for their views on dilemmas through the intranet. This time the dilemma was: would you rather have a small desk of your own or a more spacious flexible workplace? The idea behind this was: when staff have their own personal desks, they often stand unoccupied, and hot-desking creates more space for the staff present. But the results of the poll were clear: 574 of the 656 respondents would rather have their own desk.

Organizer Sabine Vreeburg of the WUR Council is not sure how to interpret this poll, though. 'From the comments it is obvious that many staff associate hot-desking with an overcrowded, noisy open plan office in which it is impossible to concentrate on your work or conduct a long phone call. Perhaps that is why most of the responders prefer a desk of their own.' The poll is not a representative survey, Vreeburg stresses. 'There might be a need for one.'

There has long been dissatisfaction with the large open plan offices in Radix, where up to 20 or 30 PhD students sit together in a room. Of the 91 staff of the Plant Sciences Group who responded to the poll, 88 voted for a small desk of their own. But even in other Science Groups, there was a clear majority in favour of a personal workplace: 74 to 11 in Animal Science,



▲ The large open plan offices in Radix have been a source of irritation since the building was opened in 2009.

42 to 10 in Social Sciences. Neither of these groups have open plan offices in Wageningen.

Irritation about the workplace runs particularly high among PhD students, as is shown by the nearly 200 responses to the poll that came in through Young Wageningen.

A big majority of these responders opted

for a work station of their own. The WUR Council is currently discussing staff working conditions with the Executive Board, says Vreeburg. ② AS

Read too Opinion on p.22: Anything but Open Plan

WUR WANTS EU PROJECT TO GET MORE WOMEN AT THE TOP

WUR is participating in Gender-SMART with the aim of increasing the number of women in leading positions. This EU project aims at a gendersensitive applications procedure and at embedding gender more thoroughly in education and research.

It is good timing for the EU project, says project leader Margreet van der Burg of WUR. 'There is a big demand for researchers with gender expertise in the Life Sciences, and the project comes at the same time as the policy to appoint more women and more international staff at WUR.'

In the next few months, a WUR project team is going to document the gender-related measures taken in recent years, and which ones were successful. Van der Burg gives an example of the

workshops organized by Plant Sciences to identify the obstacles to appointing more women. They resulted in a 10-point plan with tips such as: send vacancies to 10 women in your network and make sure half the applicants invited to the first round of interviews are women. The plan is to hold such workshops in the other Science Groups too.

The project team also wants to find out which WUR groups pay

attention to gender in their education and research. Van der Burg: 'We want to bring together people who work on gender within WUR, so as to improve gender education and get a stronger gender element into research proposals. That is something donors are asking for.'

WUR aims to draw up a threeyear project plan at the end of this year. The EU is investing three million euros in the project. ② AS

STALKER GETS RESTRAINING ORDER

The 32-year-old man from Arnhem who has been stalking WUR is not allowed to seek further contact. If he does so, it will cost him money and ultimately his freedom.

This was the court's provisional ruling in the lawsuit WUR brought against the man. The stalker will be fined 500 euros per breach of the restraining order. If he has failed to pay after 10 breaches, WUR has the right to demand a week's detention. The decision meets all WUR's demands.

Since 2016, the man has been pestering WUR directors, staff and students. This started after he was rejected for a degree programme because he did not meet the admission requirements. The man took revenge through emails, phone calls and social media, making quite a few threats.

WUR demanded a restraining order with both detention as well as fines for infringement, as the institution doubts whether fines will be effective. The man has been evicted from his house due to debt, so WUR argued that a fine will not make much impression. The judge agreed.

WUR spokesperson Simon Vink is satisfied with the judgment. 'We hope the stalker will now really stop pestering and insulting members of the Board, staff and students.' **Q RK**

(C)OLUMN|VINCENT

Rentabike

If you look down from the upper floors of Forum or Orion, it looks at first as though a blue fungus is growing all over the bike racks. Once you look better, it turns out to be the blue front tyres and locks of countless *Swapfiets* bikes.

Swapfiets has swept through Dutch university towns in just a couple of years.

The concept is simple: for a fixed monthly

university towns in just a couple of years. The concept is simple: for a fixed monthly sum you are mobile, without any worries about your bike breaking down. If something is wrong, the fast lads from *Swapfiets* are always ready with professional support. If necessary, you can swap your broken bike for one that works – hence the name.

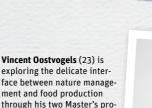
I've always looked down a bit on these 'swap bikes': 'That's for people who never learned to mend a puncture.' And I'm enormously attached to my rickety student bike, which I bought a few years ago for 30 euros in Ede. But sometimes I can use a bit of professional support. Like not long ago, with a force 8 wind in my back over the Grebbe dyke, when my pedal brake failed and I landed in the fence on the side of the road. Soaking wet, I arrived at the bicycle repair shop, where it turns out they are also always ready with professional support. The hub proved to be broken, and there was a whole list of other parts that needed replacing too.

Maybe it is time to swap my precious student bike for another one. But one of those with a jolly blue front tyre? I doubt it. **3**

grammes, Forest and Nature

Conservation and Animal

Sciences





IN BRIEF

>> 101ST DIES NATALIS

Carillon music

WUR's new carillon played a fragment from Beethoven's *Ode to Joy* to accompany the procession across campus on Monday 11 March. The carillon was officially unveiled in November at the close of WUR's centennial celebrations. It has been silent ever since. Until 11 March, that is — the university's 101st *Dies Natalis* — when it chimed as the parade of professors walked past towards Orion. Guest of honour David Coomes, held a keynote speech in Orion on the use of technology in ecology.

See too the article on page 12.



The procession of professors braves windy conditions on the Dies Natalis on 11 March.

>> WORKLOAD AT UNIVERSITIES

'Getting even greater'

Measures to reduce the workload at universities have had little effect so far. Staff say the pressure of work is the same or even worse, according to a new survey by trade unions. The unions asked the opinion of over 1100 university staff members. 67 per cent say they find the workload to be high or very high. Academic staff are more likely to find this (76 per cent) than support staff (50 per cent). 71 per cent of all respondents think the amount of work has increased in the past two years. ② HOP, Hein Cuppen

>> BEST CITIES FOR ROOMS

Wageningen second

Wageningen is the best city for student rooms after Enschede, according to student union LSVb and student accommodation expertise centre Kences. Last year, Delft came top and Wageningen ended in fifth position. The list is compiled to draw attention to the issue of student accommodation. It shines the spotlight on municipalities who tackle room shortages effectively. Wageningen is lauded for the collaboration between Idealis, WUR and the municipality in the annual housing monitor, among other things. **Q RK**

TEMPORARY OFFICES NEAR RADIX AND AXIS

The Plant Sciences and Agrotechnology & Food Science Groups (PSG and AFSG) will soon be putting up temporary offices near Radix and Axis to cope with growth.

With the continuing rise in student numbers, all the Science Units face a growing shortage of teaching space. For this reason, a third education building is going up on the site where the StartHub is currently located. This building is set to open in September 2021.

Until then, the Animal Sciences Group (ASG) and the Environmental Sciences Group (ESG) can find ways of coping with the growth. The same goes for the Social Sciences (SSC), because there will soon be more space in the Leeuwenborch when Wageningen Economic Research moves to Atlas. But PSG and AFSG are bursting at the seams. AFSG will therefore gain an extra 1000 square metres near Axis, and PSG will gain 2000 square metres near Radix.

The board expects the AFSG's shortage of space to continue after the completion of the third education building. The temporary office space near Axis will therefore remain in use even after 2021.

SANDWICH PHD STUDENTS MAY GET HOUSING GUARANTEE

WUR and student housing provider Idealis are exploring the possibilities for guaranteeing sandwich PhD students accommodation for their first three months. The university's aim is to improve the difficult housing situation for this group.

A recent survey by the PhD Council showed that many PhD students have trouble finding accommodation in Wageningen. It is particularly difficult for the sandwich PhD students, who do their fieldwork in their home countries and spend several short periods in Wageningen. They often have to live off a grant and cannot afford expensive private hous-

The PhD Council held a meeting about the situation on 6 March. International PhD students talked about how hard it is for them to find somewhere to live in Wageningen, especially in their first few months when they don't know their way around. In response to this, the university and Idealis are looking into whether they can offer a guarantee of temporary accommodation. The idea is that WUR would reserve rooms with Idealis for sandwich PhD students. They could live in Idealis rooms for three months, while looking for other accommodation.

The university also wants to provide the chair groups that take on the PhD students with clearer information about the housing market, says



There is currently space for PhD students in the Chemistry building on the Dreijen campus in Wageningen.

Frank Bakema, manager of Education & Student Affairs. 'At present the chair groups are not sure which door to knock on and what the rules are. There is lots of room for improvement there.'

From its survey, the PhD Council reckons there are currently about 40 PhD students who don't have accommodation and are staying with friends. Bakema: 'I would like to know the names of those PhD students, because I can get them somewhere to live tomorrow. There are rooms empty at the moment in the Chemistry building and at the former baracks in Ede.' Bakema feels too that the university should provide more comprehensive information about living in the Netherlands. **② AS**



A look at the British

'Have the British gone mad?' This was the central question in the Studium Generale lecture on Brexit delivered by journalist Joris Luyendijk on Tuesday 19 March in Wageningen. Luyendijk told a packed audience how the British tabloids conducted a ruthless anti-EU campaign. 'Leave won the vote in Britain by casting anyone in favour of the EU as corrupt or evil, or stupid. But they could do so in part because of how they were treated by the Remainers, who contribute to the polarization by denying that it's possible to be a decent person and against the EU at the same time.'

@ LZ, photo Sven Menschel

Newcomer Hannie van der Honing on shortlist

NOMINATIONS FOR TEACHER OF THE YEAR ANNOUNCED

Jessica Duncan, Hannie van der Honing, Fred de Boer, John Beijer and Huub Savelkoul have made it onto the shortlist for the Teacher of the Year Award 2019. Savelkoul and Duncan have won the prize once before; Van der Honing is nominated for the first time.

The first round, in which students could vote for their favourite teacher, generated a longlist of 17 teachers. A jury of eight students interviewed all these teachers and selected a top five: the shortlist. The jury's main considerations were their innovative teaching methods, involvement with students and passion for teaching. This week, the shortlisted teachers were surprised at work by the jury and a Resource video crew.

Cell Biology programme coordinator Van der Honing is very happy about her debut on the shortlist. 'Even as a student, I enjoyed giving presentations, and I taught at a secondary school while I was doing my PhD. I like explaining something in a structured way.'



Hannie van der Honing was surprised by Teacher of the Year jury during a lecture.

All the shortlisted teachers get a sum of 2500 euros to spend as they see fit. The winner of the Teacher of the Year Award 2019 will be announced in late spring. ② LZ

HERE IS WHAT THE JURY THOUGHT

John Beijer (Aquatic Ecology)

'His passion is incredible. The way he talks about his students and about teaching is as inspiring as his stories.'

Fred de Boer (Resource Ecology)

'He has unique ways of conveying information and manages to make a course like statistics fun.'

Jessica Duncan (Rural Sociology)

'She is really approachable and creates a safe space in which it easy to ask questions. She also knows what to say to make students think.'

Hannie van der Honing (Cell Biology)

'She is really involved with her students, and she is super-structured, which makes it very clear to the students what is expected of them and when.'

Huub Savelkoul (Cell Biology)

'Anyone can drop in on him any time and he uses the news to keep his courses interesting and up to date.'

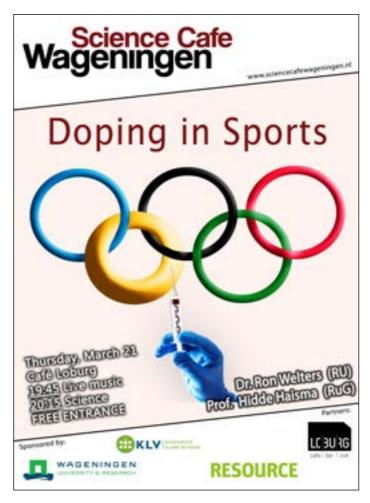
YOUNG ACADEMY WANTS TO EXTEND RIGHT TO BE PHD PROMOTER

All university professors, and not just full and associate professors, should be allowed to be PhD promoters, or chief supervisors, says the Dutch Young Academy. The Wageningen PhD Council doubts whether PhD students would benefit from this.

In 2017, the Dutch rules changed so that it is no longer only full professors who have the right to be PhD promoters, or lead supervisors. But the Dutch Universities Association VSNU stipulated that this right was only extended to associate professors. Not all universities are playing by the rules, the Young Academy's investigations showed. The two Amsterdam universities are more flexible and allow assistant professors who hold a PhD themselves to play the role of PhD promoter too.

The Young Academy argues for making the Amsterdam flexibility the norm. 'All assistant professors who, as the leading expert in the field, supervise a PhD student should be able to act as promoter,' says Martijn Wieling, vice chair of The Young Academy. Quality requirements should be put in place, and universities should be prepared to withdraw promoter rights if there is reason to do so.

The Wageningen PhD Council wonders whether PhD students stand to benefit from a further extension of the right to be promoter. 'The important thing for us is not so much who is the promoter as whether the PhD student receives good supervision,' says Job Claushuis. 'The quality of the supervision at WUR is generally good, but the intensity leaves a lot to be desired. The term 'daily supervision' is just a form of words. PhD students often have to fight to get two hours of supervision a month. It is questionable whether that will change if assistant professors get to be promoters. Especially if it means more PhD students coming to Wageningen. Then the problem will just get bigger.' ② HOP/TL



CAUSE OF MYSTERIOUS FRUIT ROT FOUND

A mysterious form of fruit rot in apples and pears has plagued Dutch cold-storage warehouses in recent years. Applied researcher Marcel Wenneker has now found the fungi responsible. He received his doctorate for this discovery on 25 February.

Normally, fruit can be stored for 10 to 12 months in cold rooms when the conditions are optimized. However, in the past few years apples often started rotting after three to four months and pears after five to six months. The growers could not work out why.

Marcel Wenneker of the Field Crops business unit at Wageningen Plant Research in Randwijk took samples from infected apples and pears and discovered around 15 fungal diseases that were barely known in the Netherlands up to that point. Most were found only occasionally and affected 10 per cent of the fruit at most. But two fungi were running riot: Fibulorhizoctonia psychrophila among apples and Cadophora luteo-olivacea among pears. Wenneker: 'These fungi are unique to the Netherlands. It could be that they thrive on the varieties of apples and pears that are

grown in the Netherlands, but it could also be because they mainly appear when fruit is stored for a long period.'

Wenneker discovered that the fungi causing the storage diseases had an unusual characteristic. The fungi infected the fruit during the growing season, then went dormant and only caused visible symptoms of rotting months later. 'That means spraying fungicide just before harvesting is pointless;

the fungi will already have infected the fruit.'

The applied researcher is now investigating how the fungi manage to survive in orchards. 'It looks as if they colonize various substrates, such as leaf and weed waste matter, and produce spores in the fruit-growing season that infect the fruit.' It would seem sensible to remove the plant remnants, according to Wenneker, but that is still a guess at present. 'I'll probably be able to give specific recommendations in two years' time.'

Wenneker wants to move towards environmentally friendly control of the fungi but that is not easy. 'The Netherlands is so wet that it's a real breeding ground for fungi.' He advocates a systemic approach based on sound understanding of how the pathogens spread in the orchard, the fruits' defence mechanisms and the interaction between the fruit trees and the fungi. **@ AS**



PHOTO: MARCEI WENNE

HEAT MAP SHOWS CAMPUS STAYS COOLEST

The best place to be in Wageningen on a hot day is campus, according to a detailed heat map composed by Wageningen meteorologists.

The map shows how hot or cold it feels in various parts of Wageningen on a random hot day. The typical day chosen for the model is a July day in 2017 when temperatures rose to 35 degrees Celsius.

Researchers Bert Heusinkveld, Gert-Jan Steeneveld and Sytse Koopmans are the men behind the heat map. The reason for the map is the requirement for local authorities to perform a heat stress test this year. The test should reveal where heat levels could become extreme and where the risks to public health and infrastructure are greatest. Heusinkveld: 'We were asked to draw up a procedure for such heat maps as part of the major Spatial Adaptation plan.'

Heat maps are not a new concept and there are already various commercial products on the market. 'But they are based on satellite images of radiation intensity, for example, and are not very realistic,' says Heusinkveld. The Wageningen scientists produced a map based on the apparent temperature. 'This measures how hot it feels,' explains Steeneveld, 'because it takes account of factors such as the intensity of the solar radiation and wind speeds.' Calculating the apparent temperature requires data on land use, buildings, trees, streets and water features in addition to meteorological data.

The resulting urban map is hot stuff. The apparent temperature can rise above 40 degrees in many places, particularly in spots sheltered

from the wind with a lot of direct sunlight. 'Wind chill is a key factor in the apparent temperature,' says Heusinkveld. 'That's one of the reasons why the campus is a cool place: it is open terrain.'

The Wageningen procedure for creating a heat map has now been designated the standard by the ministry of Infrastructure and Water Management, says Steeneveld. ③ RK



LLUSTRATION: WUR, METEOROLOGY AND AIR QUALITY

VISION

'We need a business model for climate measures in agriculture'



The Netherlands Environmental Assessment Agency (PBL) presented its analysis of the Dutch Climate Agreement last week. At around the same time, WUR researcher Theun Vellinga published a study on possible emissions reduction in agriculture. Oene Oenema, professor of Sustainable Soil Use and a reviewer of the PBL report, puts the two studies in perspective.

Are these two studies related?

'Yes. Vellinga calculated what agriculture can do to cut back emissions of the greenhouse gases methane, nitrous oxide and CO₂ by 2050. The PBL assessed how much emissions reduction can realistically be achieved by 2030 through the measures proposed in the Climate Agreement. And there is a big difference between the two. Vellinga says that in theory, we can achieve a very big reduction in the agriculture sector by 2050. The PBL expects a negligible reduction of emissions by 2030, due to a lack of incentives.'

Why is that?

'The reason is that agriculture has already cut emissions by roughly 30 per cent over the past 20 years through efficiency measures and the manure policy. Further reductions will require more measures, and they cost money. The parties which sat at the five 'climate tables' to write the Climate Agreement for different sectors opted for financial incentives: subsidies, measures to encourage action, funds. But

in the PBL's view, it is doubtful whether there is enough funding, and whether the farmers will find the funding attractive enough. One of the proposed measures is to get farmers to store more organic matter – and with it, $\rm CO_2$ – in the soil. The PBL does not believe this will deliver any emissions reduction, because there is no financial incentive to make it happen. Farmers would have to adapt their approach in order to store more organic matter. They will only do that if it pays.'

The main measure, says the PBL, is to cut back methane emissions. What will that take?

'The issue is the methane production by cows and from manure stocks. Cows can be bred to produce less methane - there is genetic variation in the amount of methane they produce - and by changing their feed. With a combination of those two measures you might be able to halve the methane production, but it takes time. The most important measure for the manure is to separate the poo and pee of cows in the barn, but that means adapting the barn. This is only financially worthwhile for new barns, so it won't amount to much before 2030. Another option is to put the slurry straight into a methane digester on the farm. That could be done at once, but it costs the farmer money, because a digester on the farm is not viable at current energy prices. So you need subsidies.'

Could the agriculture sector also reduce CO, emissions by flooding peatland?

'Peaty areas are currently drained for agriculture, causing the peat to oxidize and release CO_2 into the air. You can reduce than by not draining it as deep, but that means you can only practise extensive agriculture on that land. The question is again: what is then the farmer's business model? The climate tables place very little emphasis on this measure. The PBL assumes the groundwater level of 25,000 hectares of peatland will be raised: that is about 10 per cent of all the peatland in the Netherlands.'

Is planting forest a more effective measure?

'You capture the most carbon in a forest, then in grassland, and third comes farmland. So switching from farmland to grassland and forest does help. It is therefore useful for farmers to plant fruit trees, walnuts and hedgerows. But once again, the question arises: how does a farmer make that pay?'

Summing up?

'To achieve the climate targets, more of the same is not enough. Farmers will have to adapt their methods and/or the structure of their farm. And then they need a business model.' **@AS**

Read too the article Earning Money by Storing Carbon, on page 20

TROPICAL FOREST RECOVERS FAST AND SLOWLY

After felling, tropical forest recovers fairly fast. But it is never quite the same as it was. At least, not for several centuries. These are the findings of a large international study led by Wageningen forest ecologists Danaë Rozendaal, Lourens Poorter and Frans Bongers.

This was the first time the forest's powers of recovery have been monitored in small tracts of tropical forest felled for small-scale agriculture. The researchers used data from 56 locations in 10 different countries in South America. The study shows that the number of species reaches 80 per cent of the number before felling within 20 years. But this is a misleading statistic, as only 34 per cent of those species match the original species. It takes many centuries before the forest is restored to its former glory, if ever.

It should be noted, however, that there are big differences between locations. There can be all sorts of reasons for that variation, says Rozendaal. 'It has to do with the kind of forest: wet forests have far more species than dry forests. But the kind of agriculture and its duration make a difference too.'

That the forest recovers to some extent is good news. 'But it cuts both ways,' says Ro-



A secondary tropical forest doesn't necessarily have fewer species that the original forest, but different ones.

zendaal. 'The number of species gets back to normal quickly, but getting back to the old composition goes slowly or doesn't happen at all. Biodiversity is a matter of both the number of species *and* the species composition. For that composition, you have to protect old forest.'

It is also questionable whether total restoration should be the aim. Rozendaal: 'It is not realistic to aim at restoring exactly the same composition. The forest is never going to look 100 per cent the same again. What is important is to restore the functions of the forest. We are doing a study on that now.' **©** RK

COOKBOOKS REVEAL A LOT ABOUT EATING HABITS

How can you find out how eating patterns have changed over time? By reading old cookbooks.

'Eating habits are usually studied using questionnaires,' says Marjolein Buisman, a PhD candidate at Operations Research & Logistics. But cookbooks turn out to be a valuable source of information too. Together with her colleague Jochem Jonkman, Buisman studied editions of the cookbook produced by the Dutch women's magazine *Margriet* in 1950, 1970, 1989 and 2010. 'We chose these cookbooks because they sell well and they contain a lot of easy, everyday recipes.'

Buisman and Jonkman selected 187 recipes for evening meals and did a computer analysis of the ingredients. What struck them was that portions got smaller over the years. 'But you have to realize that in the 1950s, people ate three meals a day and often did strenuous physical work,' says Buisman. In the more recent recipes, portions of vegetables and carbohydrates, such as pasta and potatoes, were smaller. But they

contained a higher proportion of protein, especially animal protein.

The researchers compared their findings with the *Dutch National Food Consumption Survey* (NDFCS), which has been monitoring Dutch eating habits since 1987. They saw considerable similarities but there were a few differences too. The NDFCS results showed an increase in the proportion of plant protein rather than of animal protein. The NDFCS also registered an increase in carbohydrates. Buisman: 'This is probably because snacks between meals and sandwiches are high in carbohydrates. The cookbook analysis focused only on evening meals.'

Buisman thinks it would be interesting to expand the cookbook analysis. 'Not to replace questionnaires: they provide much more detail. But you can spot trends in a cookbook quite easily, and then you could zoom in on those in a questionnaire.' The cookbooks could also be a good option when no other information is available. **@ TL**



PhD researcher Marjolein Buisman compared recipes from the cookbook published by Dutch women's magazine Margriet in different years.



PROPOSITION

'I explained problems to my fish first'

When their supervisors are busy, PhD students can feel quite alone. Uma Khumairoh, from Indonesia, discovered it could help to talk to your pets – who she promptly named after her supervisors.

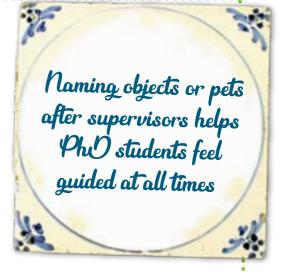
'When you do a PhD overseas, you are not just far away from all your friends and family, but you also have to adapt to a new environment. The culture and ways of communicating are different, and there is also often some kind of language barrier. This combination can make you feel alone and misunderstood. Especially if your supervisors are very busy and most of your contact with them is by email.

At the start of my PhD research, I expressed my feelings about this in my emails to my supervisors, but because of the language barrier, I often couldn't find the right tone or words. Little things can become very big when you get the communication wrong, which caused difficul-

Uma Khumairoh graduated with a PhD on 5 March for her study of complex rice systems as a means of increasing and stabilizing productivity. ties in the contact with my supervisors. I discovered that I could distance myself a bit from the situation by first talking to an animal or an object. That helped me to see what role I could play myself. And once the first emotion is gone, you can take time to think quietly about

exactly what you want to express.

It also helped me to put my thoughts in order when I came up against a problem. If my supervisors were busy, I explained the problem to my fish first. As I was talking I would often come up with a solution myself. This meant I didn't have to talk to my real supervisors as often. What's more, if you name your pets after your supervisors, there is no need to be jealous of colleagues who have weekly consultations with their supervisors. Suddenly, I was talking to my supervisors every day!' ③ BvdB





For many years, ecologists and engineers seemed to come from different planets. But that was then. Nowadays, nature conservationists measure the carbon storage of forests with lasers and track poachers with artificial intelligence.

text Albert Sikkema photos Kim Calders, Friedrich Fedor Reinhard, Alvaro Lau, Shutterstock

ainforests are important carbon sinks, but exactly how much carbon does a forest store? Until recently, forest ecologists looked for answers by entering a rainforest in raincoats and clutching machetes, marking a plot the size of two soccer fields and measuring all the trees on that plot –both their height and their diameter. The results were then scaled up to the level of the forest as a whole using modelling.

The ecologists of today can do a lot of their work at their computers. British forest ecologist David Coomes, keynote speaker at Wageningen University's *Dies Natalis* on 11 March, uses aeroplanes equipped with laser scanners to scan the forest canopy in an area of 300 square kilometres in Malaysia. These scans provide Coomes with information about the

height and growth of the trees and the storage of carbon in the forest. He can repeat these measurement every year, and can thus monitor the fluctuations in CO_2 storage over time. This enables him not only to measure the carbon in forests much more precisely, but also to demonstrate whether governments and private sector initiatives are complying with international treaties to stop deforestation and degradation.

CAMERA TRAPS

Coomes is a pioneer of the use of new technologies for ecological research. These technologies are developing very fast, as another example makes clear. Ecologists used to arrange expeditions to remote forests to track down rare species. Nowadays they hang up camera traps to record passing wild animals. But

Coomes is already testing a new method of recording rare species. One member of his staff collects leeches in the forest. DNA in the blood of this parasite tells the ecologist which mammals it has fed off.

Ecologists from Wageningen University & Research are testing new techniques for their research too, as we learned at the *Dies Natalis*. Jasper Eikelboom, a PhD student at the Resource Ecology group, uses GPS devices on animals to detect the presence of poachers in game reserves. The wildlife itself shows him where to look. Eikelboom studies where the deer, wildebeests, lions and other game are in the reserve. From this mass of data, he identifies the spatial-temporal patterns of their usual foraging movements in the reserve. When poachers approach, the animals tend to diverge from those routes, Eikelboom discov-



ered. In a trial with the technique, he was able to predict the presence of poachers in 86 per cent of the cases. The new method, in which Eikelboom uses artificial intelligence, can help game reserve managers to arrest poachers.

HUGE DATASETS

Ecologists were always excellent statisticians, says Coomes, because they had to deal with small datasets and many uncertainties. With these new technologies, they now receive huge datasets. Moreover, they now have access to systems like Google Earth Engine, which speed up the rate at which they can extract useful information from the mass of data.

Just like Coomes' group, the Geo-information Science and Remote Sensing group at WUR has embraced new laser technologies.

The laser scans this group makes in many tropical forests help the researchers to figure out not only how big the trees are, but also the number and composition of branches and leaves on the trees. 'We used to have to cut the trees to get this information,' says Professor Martin Herold. Now he gets much more accurate information on hundreds of trees handed to him on a plate.

DIGITAL TWINS

'With this information we can make digital twins of tropical trees,' says Herold. 'The advantage is that it makes our research more transparent, and other groups can also use three-dimensional tree models for their research.' As a result, it has become easier to evaluate data on the trees' internal structure, physiology, resilience to wind, and carbon stocks.

Herold does not know yet what new knowledge will emerge from this. 'We used to make models from small datasets, so as to scale up the results. We now have loads of measurements and datasets, which we can also combine using powerful software and algorithms. We are entering uncharted territory since we can start to answer questions that we might have not thought about before.'

ILLEGAL LOGGING

Herold also mentions the rapid development of satellite technologies. The world's forests are being monitored more frequently by more and more satellites. The quality and variety of the images are increasing tremendously. As a result, the satellites can easily spot any changes, including illegal logging in the forests

Herold's group is currently engaged in a large-scale research project in Malaysia and Indonesia, where palm oil companies have made an agreement with the Roundtable on Sustainable Palm Oil. The GIS group uses satellite time series to check whether the companies really don't disturb the natural forest on and near their plantations.

This project also demands new ways of going into action on the basis of the research data, says Herold. 'If the images raise suspicions that the forest is being disturbed, we are able to send this information quickly and automatically to a local official's smartphone. For this we need automated, fast detection and machine learning.'

GOLD DIGGING

All the new technology enables ecologists to answer fundamental scientific questions more easily, explains Coomes. As an example, his group is studying the question of why some trees in the rainforest grow to heights of up to 100 metres, towering 20 metres above the canopy. He hopes to find the answer by measuring the height of the trees and assessing a number of variables such as shape, light, soil, water and diseases. But you can also use these techniques for more lucrative activities, says the British scientist, like looking for gold. With the right equipment on board you can find gold in the ground from a plane. Big Brother is watching, even underground. **Q**







To protect woodland and game, today's ecologists use drones, laser equipment and aerial photos or satellite images.



ow will we feed the world in 2050?' Anyone hearing this question who's been involved in the food supply debate for a while will brace themselves for a new outbreak of trench warfare. Traditionally, the two sides are made up of 'believers in technology' and 'believers in nature'. In other words: can we innovate our way out of our problems, or are we at last going to listen to what nature is trying to tell us?

The American historian and science journalist Charles C. Mann wrote a well-received book juxtaposing these world views: *The Wizard and the Prophet*. The 'wizard' of the title is Norman Borlaug, the American agronomist who did research on high-yield grain varieties in the 1940s and 50s. With a smart combination of good quality seed, artificial fertilizer, pesticides, technology and irrigation, he succeeded in doubling or tripling harvests. This made Borlaug the ideological father of the Green Revolution – the process of agricultural intensification that took off after World War II.

DIVIDE

The 'prophet' in question is William Vogt, a less famous but influential contemporary of Borlaug's. He was one of the first to apply the concept of carrying capacity, which originated in biology, to the earth in its entirety. This proved a cast-iron way of showing that humanity's insatiable hunger for more is doing irreversible damage to the planet. Or at least, so much damage that it will no longer be habitable for humans. Vogt's answer: instead of applying technical know-how, take a better look at what the ecology that humanity is so dependent on needs. So Vogt's ideas laid the foundations for the modern environmental movement. The divide Mann describes pervades society and is reflected in today's scientific debates. At a seminar on 29 March, WUR wants to look for a new narrative that is free of this dichotomy (see inset). The author himself will be present. *Resource* has already talked to him on Skype.

Is it possible to reconcile the world views of 'wizards' and 'prophets'?

'That will be very difficult; they really are opposites. But there are common denominators. Not least, the fact that prophets and wizards both believe that we can solve the problems we have caused. That doesn't go without saying. Besides the 'wizards' and 'prophets', I also talk in my book about the vision of the American molecular biologist Lynn Margulis. She declared that the current dominant position of humans is nothing new; it has happened before that a single species dominated the earth, and without exception, those species all caused their own downfall. Margulis saw this as a law of nature, and she accepted it, but not many people will agree with her on that. Most people think we hold our fate in our hands and must do something. But what we should do is a question on which opinions differ widely.'

Shouldn't we just make a decision? Go all out for technology, or for a natural approach?

'Yes, but which one then? I have described the two teams, but that doesn't mean I have a crystal ball with which I can see into the future. What I do flag up is that a lot of energy is wasted on arguing amongst ourselves, which we really don't have time for. The food crisis is just one of the problems. In my book I also go

WHEN WIZARDS MEET PROPHETS

A new perspective which brings together respect for nature and technological innovation. That is the goal of the seminar *When wizards meet prophets* that takes place in Impulse on 29 March. As well as Charles Mann, speakers will include WUR President Louise Fresco, Jan Willem Erisman of the Louis Bolk Institute and several WUR scientists. See wur.eu/wizards-prophets.

into the climate crisis, the energy crisis, the water crisis... They all need to be solved fast, one way or another.'

Are there people who have successfully synthesized the two world views?

Mann is quiet for a moment. 'To be honest, I can't think of anyone right off the top of my head.' Then he adds: 'The people who come to mind are mainly those who manage landscapes. Forest managers, for instance. They operate in new ecosystems that have been influenced a lot by people. They have been through higher education but they do practical work every day. Or they've been managing landscapes for generations, like some of the indigenous peoples here in the US. They use both their traditional knowledge and the latest technology to limit the impact of human intervention on ecosystems.'

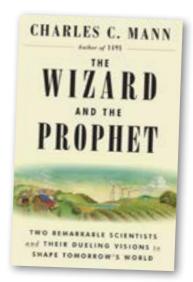
What role can WUR play?

There is a very big role for institutes like Wageningen! Science as a whole is plagued by silo thinking. What I mean by that is that it is very hard to look beyond your own discipline, your own silo. Researchers have got to get out of their own offices and join a conversation at the other end of the campus. Universities – and I suspect Wageningen is no exception – are also very much focused on the age-old question of how to get as many calories as possible out of one hectare. But in a lot of places, that is by no means the most important question anymore. In countries such as the Netherlands, more than enough is produced already. The main question is then how you keep the impact of that production as small as possible. And even if you do look at calories, there can be ways of achieving your goal that are so "out of the box" that no one takes them seriously. Did you

know that an adult chestnut tree produces more calories per hectare than grain? You should do research on solutions that lie well outside your field of vision. And that is incredibly difficult.'

What would make the symposium a success for you?

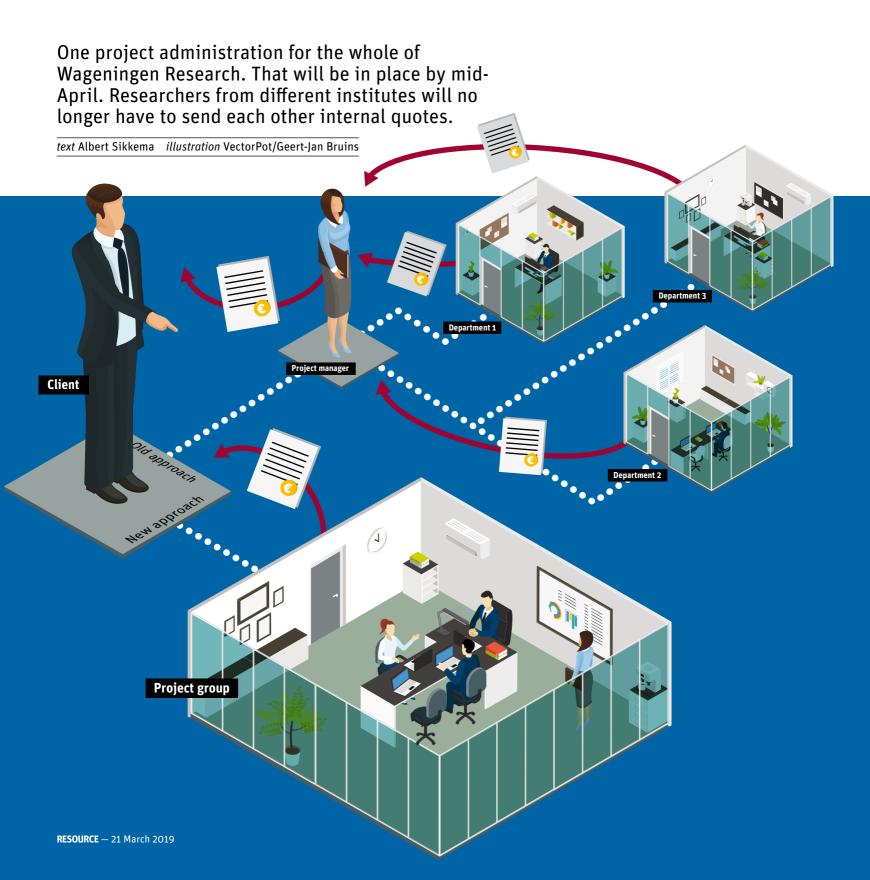
Laughing: 'Oh, I would love it if someone stood up and said I've got it all wrong, and that my model is not a good representation of the debate. But then that person does have to come up with an alternative with which we can do better at tackling the problems. That would be wonderful!' **3**





Wageningen Research simplifies internal collaboration

No more barriers



nternal operations at WUR is not the sort of topic you use to liven up the conversation at birthday parties. But researchers in the nine Wageningen Research institutes cannot always avoid it. The get asked with increasing frequency to do research together. But that means taking some big hurdles.

The researchers have to hire each other through 'commitment letters', a kind of internal quotation including financial and legal agreements between the Wageningen Science Groups. They agree between them who is doing which part of the assignment for x many hours at a rate of y, the controllers and legal advisers at all the Science Groups involved check these arrangements, and the directors then ratify them.

CRAZINESS

'In terms of operations, the institutes currently treat each other like external parties,' says Menno van Manen, Director of Operations at the Animal Sciences Group. This leads to internal red tape, with amusing consequences at times. 'I have signed contracts between Wageningen Livestock Research and Wageningen Bioveterinary Research, both part of the Animal Sciences Group,' says Van Manen. 'Then I signed at the bottom of the document on both the left side and the right side.'

The cause of this craziness: the nine institutes that make up Wageningen Research each have their own project administration. It happened like this. Ten years ago, WUR wanted to introduce a new project management system, Kameleon, but that went wrong. In 2012, WUR therefore decided to fall back on MyProjects, Wageningen Environmental Research's project administration system. The other eight institutes all got a copy of MyProjects and were allowed to add their own rules for recording hours, leave and registration. 'The institutes had different wishes, and they wanted to decide for themselves how they organized things,' recalls Van Manen. Higher up the hierarchy, no one did anything to stop that. 'We were happy that at least there was a system that worked, after Kameleon.'

DECOMPARTMENTALIZING

The past few years, however, have seen an increase in the number of multidisciplinary research questions – and therefore the number of internal quotations. So in 2017, the Executive Board set up a Decompartmentalization

working party, which included Martijn Hackmann, Operations Director at the Social Sciences Group. That working party concluded that the barriers between the administrations hampered collaboration between the institutes. As the owner of MyProjects, Van Manen was asked whether it was possible to remove these barriers without setting up a whole new system. It did prove possible. The working party has used the past six months to draw up uniform agreements on the way Wageningen Research staff should establish projects, under which conditions the institutes collaborate, and which rules of the game apply between researchers.

Hiring an expert from another institute will get easier

An example: Wageningen Economic Research (WEcR) acquires an assignment together with Wageningen Plant Research and Wageningen Environmental Research. WEcR is the contracting institute which makes agreements with the client and provides the project leader. That project leader consults the researchers at Plant and Environment, and agrees how many hours they will put into the project. There is a uniform rate for this. Chief service provider WEcR gets any profits from the project, but also bears any risks. In exceptional situations, when two institutes have acquired a big project together, with clear individual input, separate agreements can be made on profit margins and risks.

CULTURE CHANGE

This new approach will make the lines between the Science Groups shorter. It will also be possible to hire an expert from another institute to do some work for a project without a lot of red tape. 'Then we can mobilize our expertise better for our clients,' says Van Manen. He also expects that his own role, and that of the other operations directors, will shrink. 'With this approach you place more trust in the project leader.'

This is quite a big culture change, the directors think. 'The institutes used to aim at maximizing their own turnover and margins. Now we have to collaborate more and accept that the margin sometimes comes to us and sometimes to the other institute.'

To arrive at a single system, the directors had to make a lot of decisions. On which date, for example, are we going to register the hours of the previous month? Which functions – things like client evaluations, for instance – will we link with MyProjects? Will MyProjects generate a project number itself, or will the project leader do that? 'There are loads of little things you have to make arrangements for,' says Hackmann. But the end is in sight. On 17 April the Wageningen Environmental Research software developers expect to have tied up all the loose ends and institutes will be able to put projects into a joint system. One step closer to OneWageningen. **@**

UNIVERSITY NOT YET INVOLVED

One bureaucratic barrier remains standing within WUR: the one between Wageningen Research and Wageningen University. Institute staff and university researchers cannot yet register hours together for the same project. 'At the university, PhD students only declare labour costs for a project, whereas institute staff charge projects an integral rate that covers accommodation and ICT costs too. It is very difficult to bring that under a single system,' says Menno van Manen, Operations Director at the Animal Sciences Group. 'It would have a lot of advantages. Take the Animal Nutrition group. University researchers in that group regularly work on projects for external clients. Now they have to send their bills for that to Wageningen Livestock Research. A single WUR-wide project system would be great for a group like that.' WUR is soon going to look into the feasibility of such a system.





Earning money by storing carbon

By changing how they till the soil or growing different crops, farmers can capture and store more carbon in the soil. And they can earn money by doing so.

Text and photo Roelof Kleis illustration Annet Scholte

his agenda will change agriculture.' Peter Kuikman, project leader of the Soil climate pilots, speaks with great conviction. He has just explained how Dutch farmers are now in possession of a new business model: carbon capture in organic matter in agricultural soils. There is nothing scary or unnatural about this, emphasizes Kuikman. 'We are talking about CO, that has been converted into organic matter via plants. So it's in plant waste matter: leaves, roots, stems, in some cases partially converted by fungi, bacteria and other soil life. A question of soil formation and recovery. We are trying to speed up that process by putting more carbon in the soil and making sure less carbon escapes from the soil.' And then he brings in his favourite metaphor. 'See the soil as a piggy bank. You can't save in a piggy bank with a hole in it. It's hard to save if you spend more than you earn.'

LESS PLOUGHING

There are many ways of storing carbon in the soil. Live-

'The soil is a piggy bank; you can't save in a piggy bank with a hole in it'

stock farmers can use different grass varieties with deeper roots, thus storing carbon in deeper layers of the soil. They can also grow maize with strips of grass in between, so that no agricultural land is exposed and you protect the organic matter. Arable farmers can keep carbon in the soil by tilling the soil less: turning it over causes loss of carbon. Or they can rotate crops, grow winter cereals and buy organic manure from elsewhere, which would otherwise be incinerated.

Throughout the country, about 120 farmers are taking part in pilot projects in which they are trying to capture more carbon in the soil in this way. So far, they are doing this on a voluntary basis, but that is set to change.



It is possible to earn money from carbon storage, says Kuikman. In fact, that is the idea the project is based on. 'A farmer is not going to do all this if it doesn't pay off. The farmer wants a fair price for his efforts, through a system of carbon credits that we are developing.'

SOIL AS SPONGE

Arable farmer Jaap Lodders from Swifterbant is one of the farmers participating in the project. A rather atypical one, as he has been storing carbon on his 125-hectare farm for more than 10 years. Lodders is a member of the Skylark Foundation, a farmers' club that aims at sustainable practices. He generates all his own electricity; the roof of one of the barns on his farm is covered in solar panels. He holds sustainability certificates such as Planet Proof and Global G.A.P. And now he is saving carbon, partly by ploughing less deeply and shredding his wheat straw and leaving it on the land. 'Some more of that straw goes to a neighbouring duck farm, and I get it back as manure.'

Circular agriculture of the kind Agriculture minister Carola Schouten has in mind is what Lodders has been doing for a long time. The farmer's main motive is not so much to give the climate a helping hand. 'I started doing it in order to do something about soil compaction,' explains Lodders. 'On compacted soil, you get big puddles after heavy rain. By putting more organic matter into the soil, it can absorb and retain more water. You can see it as a kind a sponge.' Emissions reduction is a secondary benefit for Lodders. 'Improving the soil and cutting emissions go together. We arable farmers depend on the soil. We want resilient soils and that's something you have to invest in. That's how we see the soil, as a kind of battery. We are not out to exhaust it.'

Taking care of the soil like this is Lodders' business model. He is not yet convinced that carbon storage could be an earner in any other sense. 'We tried that within Skylark too, but it never really got off the ground.' Nevertheless, he willingly takes part in the pilot. In his case, that actually means not working a strip of land as he usually would. 'To create a baseline measurement.'

CARBON BALANCE

That baseline measurement is important. It is only useful to remunerate farmers for carbon storage if the savings are measureable and can be reported. For that reporting (at the European level), Kuikman explains that a nationwide network of more than 1400 measuring stations has been formed. The 120 participating farms are part of this. The idea is to repeat the measurements every five years, to monitor carbon levels in the soil. Kuikman: 'We also want farmers to document the carbon balance on an annual basis. Which crops are grown, in what way and how often the soil is tilled, how much fertilization takes place, etc. If the overall balance is positive, you get a payment for it.

Kuikman firmly believes in the new business model. 'There will be a new way of farming and of thinking about business operations. There will be more emphasis on long-term carbon storage. That is the challenge for the farmers.' •



Arable farmer Jaap Lodders: 'We see the soil as a battery. We are not out to exhaust it.'

SERIES EXPERIMENTING FOR THE CLIMATE

The Netherlands aims to cut its greenhouse gas emissions by 49 per cent by 2030, compared with 1990. How we are going to do that is to be laid down in a comprehensive Climate Agreement. Ahead of that, ministry of Agriculture funds are being used for numerous experiments in emission reduction. WUR is coordinating these pilot projects for the Agriculture and Land Use sector. *Resource* is currently taking a look at these experiments in four numbers. This week, episode 3: the soil.

Anything rather than HOT DESKING

Would you rather work in a small office or a spacious open plan one? The WUR Council posed this question on the intranet (see too p.4). More than 600 staff responded. Most of them want a desk they can make their own, and preferably in a small room.

text Albert Sikkema illustration Henk van Ruitenbeek



'There is no room for personal expression in the open plan office'

Linda Bakker



Research assistant at Applied Bioinformatics

'There are three of us sharing a room in Radix, and I'm very happy with that. We all work parttime, so you are on your own sometimes. I couldn't stand working on the other side of the building in one of those open plan offices. I don't like noise, chatter and movement around me.

And everyone can listen in when you are on the phone, or discussing your work. I don't think that's very good for the privacy of the person on the phone, or those around them. They say open plan offices improve communication, but an awful lot of flex workers sit with their headphones on in a world of their own. My colleagues have different views on the open plan office, but it's not my cup of tea.'

Linda Veldhuizen



PhD student at Plant Production Systems

'I understand the logic of hot desking. People are in the field a lot, in meetings, or having a mummy or daddy day, which means a lot of empty work stations. Then you opt for hot desking. The question is, who has to be flexible. In our group nearly every member of

staff has a permanent desk, and the MSc students who are working on their thesis can find themselves a hot desk every morning. So they are the hot-deskers in our workplace. I don't know how they find that, but it wouldn't work for me. I'm a creature of habit and I like to have a familiar place with the same colleagues. The thing I find hardest about open plan offices is that you can so easily disturb each other with short consultations and phone calls. So then you need a lot of meeting rooms, large and small. Radix is full, whereas the groups are growing, so this is a growing problem. You miss the small interactions. We don't talk to each other if there are more than three people in our eight-person office, whereas those kinds of moments are really important for enjoying your work.'

Jorick Bruins



PhD student at Organic Chemistry

'I work in Helix in a room with three other PhD students. It's important to me to have my own desk where I can keep my papers, notebooks and lab journals. I would find it annoying to have to keep on arranging everything on my desk all over again. Four of us sharing a room, all with

our own desks, is perfect for me. We are in the same research field, so we can ask each other things. That helped me a lot at the start. I worked in Nijmegen for a while too, in an open plan office, but I did have my own desk. That was fine; you learn to cope with the noise.'

Inge Buitink



Communication adviser at Facilities & Services

'I have a hot desk in a large open space in Actio, and I enjoy working like that. **I would hate** to go back to being cooped up in a tiny office. We have lots of different options. You can choose to work at a block of four or six desks, there are desks next to each other with partitions

between them, you can withdraw into a focus room, and for long conversations and phone calls you go into a meeting room, or sit at the social table or find a phone box. The nice thing is: in an open space like this it is easier to consult each other quickly and you get to know much more about each other's work. It helps that that we have clear agreements, which we also evaluate regularly. For example, you are asked to take your laptop and other things with you to any meeting that lasts longer than 30 minutes, so after that you have to find another work station. That's fine by me: it means you keep getting to know other colleagues. I have also seen very noisy open offices where there are a lot of distractions, but this one is spacious and pleasant.'

Leanne Westerink



Education coordinator at Marketing and Consumer Behaviour

'I've been working at Wageningen University since September. I share a room with just one colleague and that's fine. In my previous job I first worked in a room with three to four colleagues, and we had a kitchenette and a

sitting area too. That was great, but then we had to move to an open office. That meant we couldn't have lunch together anymore, and there was much less interaction. Communication became more superficial and things went wrong. I also found the open plan office soul-destroying, because no one had their own desk so you couldn't put anything personal on your desk. You have no influence on your environment, and I don't like that at all. So I'd rather have a small desk of my own than more space in an impersonal open office.'

Sietse Sterrenburg



Study adviser at the Social Sciences group

'I'm attached to my own work station where I can hang up pictures of the children, for instance. Now I share a room with another study adviser. I enjoy that, and it creates practical challenges, because we have a lot of meetings with students. At the moment we often plan

those meetings so that we don't have them at the same time, and for meetings about personal issues we also need private rooms. That can be tricky on busy days. For me it would be ideal to have a shared office with several small meeting rooms nearby. I have worked in open plan offices as well. I can do that too, but it requires a different way of working. You must have all your work on your laptop and you can't arrange your own work space. One problem is that a lot of people have to work in open plan offices against their will. I think each department should make its own plans to use the available space in a way that suits the users.' ③

Peek app teaches students to estimate size

Fieldwork 2.0

Soil scientist and legendary fieldwork teacher Gert Peek retired a little over a year ago. Now lecturers Teun Vogel and Jerry Maroulis are working on *Peek*, an app that makes fieldwork more fun and more enlightening.

text Luuk Zegers photo Guy Ackermans

On a grey Monday, four students cross the campus clutching mobile phones. They battle with wind and rain, and get wet feet on a muddy stretch of grass. Their smartphone screens show a map of the area, complete with location markers and question marks. This is *Peek*, a new educational app developed by lecturers Teun Vogel and Jerry Maroulis of Soil and Landscape Management.

The students stand still in the middle of the field. They have arrived at the first question, which pops up on their screens. 'How many hectares is the grassy field you are now standing on?' The students look around them. 'About one football field? What would that be? One hectare?' They type that in. 'Come on!' appears on the screen: wrong answer. On they go to the next question mark. And so the four progress calmly across the campus, stopping here and there to answer questions. 'How long is this pond in metres?' 'How tall is that tree in metres?'

'Estimating is very important in our field'

ESTIMATING

These questions test and train the students' capacity to estimate measurements, explain the app's creators Vogel and Maroulis. 'Estimating is very important in our field, but students often find it very hard to do,' says Vogel. 'That's why we made this app.'

It all started last year with an interactive fieldwork experiment in which students went off in small groups into the Belmonte arboretum in Wageningen. As soon as a group of students arrived at a location indicated on the map, they Whatsapped: 'We are at location 1.'

They got a reply with an estimate question such as: 'roughly how many bushes are there here?' They had one minute to answer the question. The answers were put into Excel so that a winner could be announced afterwards, and the answers could be discussed. 'So students were busy estimating and making decisions together under time pressure. They learned from that and enjoyed it, but it was a lot of work for us,' says Vogel. 'A friend of mine was sitting at his laptop all day sending questions and putting the answers into Excel. There was a simpler way to do it.'

MANY USES

Vogel and Maroulis applied for an education grant and started developing an app. 'The principle is simple,' says Maroulis. 'You use Google Maps and GPS to show exactly where the students must be in order to answer questions. Students go to the locations and fill in their answers. Teachers can download the answers, and then they can easily come back to particular questions and give feedback.'

Maroulis and Vogel soon realised that their app could have more uses than just for learning to estimate. 'All fieldwork courses can use this app,' says Maroulis. Vogel adds: 'You can ask questions like: what do you notice about this landscape? What does the soil look like? What does that mean for land use?' Maroulis: 'And the app can be used outside the university too. For anything from school trips to treasure hunts.'

TWENTY ACRES

The developers are certainly enthusiastic, but what about the students? 'I'm not very good at it yet,' laughs MSc student of International Land and Water Management Lotte de Jong (26). 'But the system works well. And estimat-



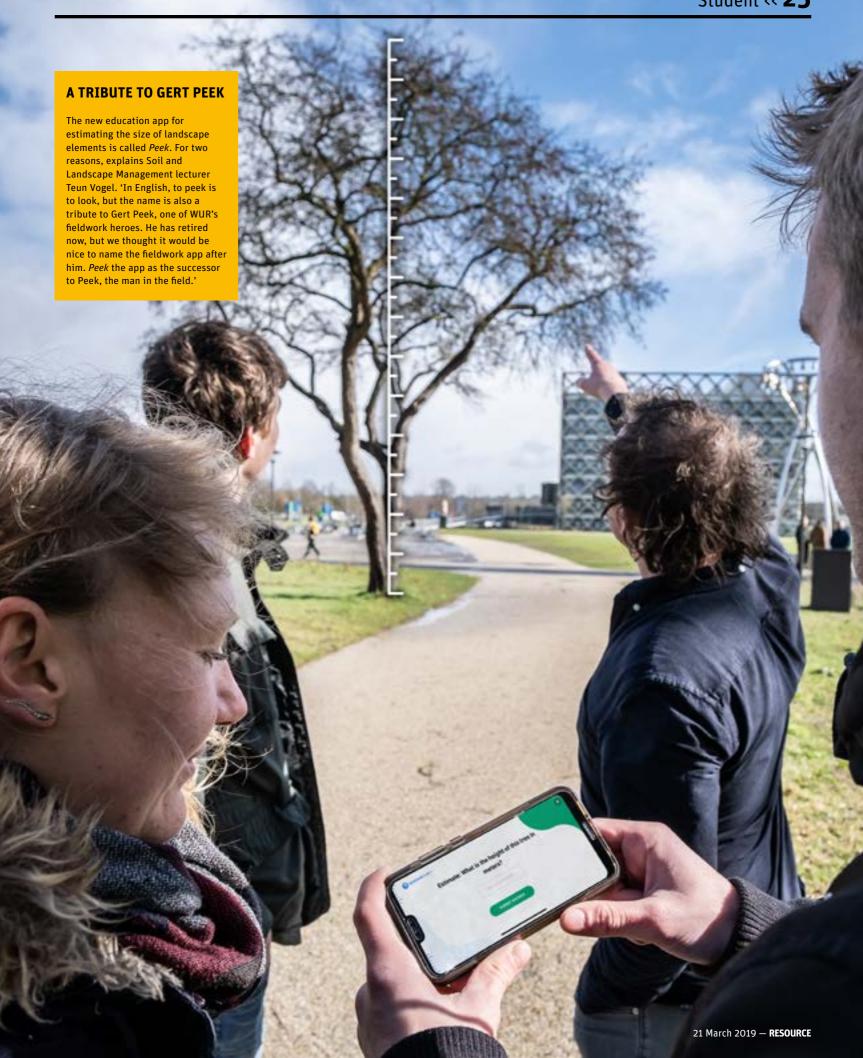
▲ Jerry Maroulis (left) and Teun Vogel.

ing will probably get easier once I have more clear reference points, like "the Forum is this high", or "this field is that long". Lotte's coursemate Thijs van der Zaan (24) sees room for improving his estimation skills, too. He thinks the app is useful. 'A few months ago I was talking to a farmer in Africa. He told me he had 20 acres of land. I thought, well, that is more than the previous farmer had, but I couldn't estimate how much 20 acres actually is.'

Master's student of Climate Studies Stefan van Gestel (24) is a bit better at estimating. 'I have always worked in agriculture, and that helps. But the bigger something is, the harder it is to estimate. The app can help me get better at that.'

READING LANDSCAPES

'How tall are you? 1 metre 85?' After a test round, the students go on making estimates. 'Even when they are not using the app, they are more aware of the world around them,' says Maroulis. 'They start reading the land-scape, they learn to appreciate it, and they ask themselves why it is being used in a particular way. That kind of awareness is not just useful during a course like this; it is a life skill.' •



AS OLD AS...

The average Dutch person is only 65 at the age of 72. We learn this from a publication in *The Lancet* by the University of Washington. Only at that age do the Dutch get the health problems that, globally, can be expected at the average age of 65. The figure tells us something about the standard of living in a country. And shows that you really are as old as you

...YOU FEEL

The Japanese feel the youngest. They are only 65 when they turn 76. The Swiss and the French come second and third. At 66, the Chinese are near the average. The Russians age early (59) and it seems life is hard on the Marshall Islands too (51). And someone always has to come last. Poor old citizens of Papua New Guinea. Their bodies reach retirement age at 46.

TASTE

Neuroscientists at Cornell University have discovered the taste centre in the brain. We 'taste' with a location on the Island of Reil in the insular cortex. The prevailing understanding is that this part of the brain responds to internal stimuli so as to assess the state of the body. Yet the Cornell scientists think external taste stimuli are part of this process too. They reflect the body's need for certain nutrients.

STAND UP (OR DON'T)

Standing up at your desk appears to have little impact on health, suggests a review study by the University of Pittsburgh. Standing up at your desk is an answer to the belief that 'sitting is the new smoking'. But research has not yet been able to demonstrate any positive effects. So for the time being the conclusion seems to be: it might not do any good but it can't do any harm.

International Lounge in Campus Plaza

Campus Plaza will get an International Lounge next year, a place where anyone with an international mindset can hang out during the day and at weekends. In the evenings, activities run by the international student societies ISOW and IXESN will be held there.

The committees of these societies will also be based at the new location. 'Their current accommodation is not ideal,' says Liesbeth van der Linden of Education & Student Affairs. 'The IXESN committee is housed in the premises of KSV Franciscus but that society is growing. ISOW is in the Building with the Clock on Generaal Foulkesweg, but the university no longer owns that building.'

The fact that the committees are moving does not mean that all activities will now take place on campus, says Van der Linden. The lounge is not big enough for that. 'Both societies often organize events in pubs or the city community centre Thuis.'

The introduction of international Bachelor's degrees was one reason for the decision to create the International Lounge. Van der Linden: 'An additional benefit is that both international student societies and the study associations with international students will be located closer together, which will make cooperation easier.'

Van der Linden hopes to be able to ceremonially open the International Lounge on around 1 January 2020. **Q LZ**



▲ Both international students and Dutch students with an 'international mindset' will be welcome in the new lounge.

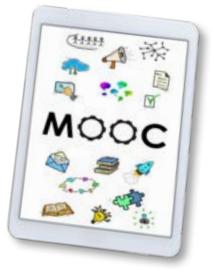
Make your own MOOC!

WUR is giving 25 students the opportunity to learn how to create a MOOC (massive open online course).

Students will get four workshops in which they learn all about the world of online teaching and at the same time work in groups to develop proposals for a new WUR MOOC. The team with the best idea will be able to implement the MOOC next academic year.

'This is a one-off course for now but the MOOC Challenge will be repeated if it turns out to be a success,' explains Nico van der Veen, student-assistant for Open & Online Learning. Students developed their first MOOC — *The Science of Beer* — last year to mark WUR's centenary. Van der Veen was one of the creators.

Students can register for the MOOC Challenge on the WUR website. The deadline is 15 April. They will receive three ECTS credits for the preparatory workshops. The winners can get up to 18 credits for designing the MOOC. **Q LZ**





Help Ghanaian children — eat out

On 30 March, Happietaria will be opening up for a month in Wageningen. If you eat out at this charitable pop-up restaurant, you will be helping free child slaves from the Ghanaian fishing industry.

Ghanaian children are used to untie knots in fishing nets underwater, says Sanne Mol, who is on the Happietaria board. 'The money we make from Happietaria will go to the International Justice Mission foundation. It invests in such things as reception centres for former child slaves and training for teachers and social workers. So every restaurant meal here will improve the life of a child there.'

The biennial Happietaria Wageningen initiative is run entirely by volunteers — mainly students — with the aid of sponsorship, says Mol. This is the 10th time that Happietaria is popping up in Wageningen. 'We hope to raise about 30,000 euros this year,' says Mol. In 2015 they raised over 23,000 euros for farmers in Kenya and in 2017 more than 36,000 euros for a healthcare project in India.



▲ Some of the dishes that will be on the Happietaria menu.

Happietaria will be open from 30 March to 26 April in the Chemistry Building, Dreijenplein 4 in Wageningen. To make a reservation, go to happietariawageningen.nl. **@LZ**

MEANWHILE IN... SYRIA

'My country is not only a war zone'

Eight years of conflict in Syria have so far cost the lives of 370,000 people. Although ISIS has lost almost all their territory and the US military is gradually pulling out, the situation is still far from stable. Master's student Ahmad Al Eido hopes he can go back some day. 'It is a beautiful place with a wide variety of landscapes in which old civilizations have prospered.'

'I had a good life in Syria. I was studying at Aleppo University and I had a job as a farming consultant. But I had to leave my country because it was not safe anymore. That was almost four years ago. I came to Wageningen to continue with my studies. People think the conflict started suddenly, but it was a result of years of repression and corruption by the regime. At first, people just wanted political reform. We conducted peaceful protests, but they were faced with bullets. We just wanted to achieve freedom of speech and freedom of choice, and to build a democratic country. We need to look for the reasons why war broke out. ISIS declared their own state in 2014, but it all started back in 2011. It is clear that the root of the problem is the regime. If President Assad had reformed the country, everything would be better now, but he

3

Ahmad Al Eido, an MSc student of Food Safety from Syria, reflects on the current situation in his home

turned his full power against his own people. The situation got more complicated when Islamic groups



came into Syria and international powers, such as the USA and Russia, transferred their own war to my country. What started as a revolution with flowers became a complex war.

I want to change people's perspectives on Syria. My country is not only a war zone. It is a beautiful place with a wide variety of landscapes such as forests, deserts and rivers in which old civilizations have prospered. People from different religions and cultures were living together in harmony. In Syria you can find churches and mosques built next to each other, without any barriers. This is the Syria I know and the Syria I want people to know about.

Hopefully, one day when it is safe again, I will go back to my country. I would like to go back to participate in rebuilding the country and use the positive experiences I have had in the Netherlands. I really appreciate the kind of life I have here. I just want the same for my people.' ② IA



Mengyu Wu (23) stands out from the crowd in Wageningen. She looks like she might be some kind of fashion student in Arnhem. Nevertheless, the Environmental Sciences student feels completely at home in Wageningen.

Mengyu comes from Shanghai, China. After studying gardening in Shanghai she decided to come to Wageningen for her Master's. 'In my Bachelor's I mainly learned about various kinds of plant species and how to manage them in practice. Now, I am mostly studying Soil Biology. Because it's relevant to what I did in my Bachelor's, but also because I wanted something a little bit different. I think soil is more interesting than just plants so I wanted to learn more about that.'

For a girl from a big city, Wageningen must have been quite a big adjustment. 'Although it is very different, I have a lot of fun here. During the courses I enjoy working in groups and being able to socialize. I think that's very fun. Over the past months I have met many people from different countries who are now my friends.'

'Some students don't care about what they wear but I enjoy dressing decently'

Mengyu is a little bit of a shopaholic, she admits. 'In China my major hobby would be online shopping but in the Netherlands I don't think much of the delivery system so I like to visit bigger cities like Arnhem or Amsterdam. I'm not really into specific brands; I will walk around the main streets and go into a store if I am attracted to it.



I also brought some clothes from China. I especially enjoy wearing skirts. I have a lot of different styles, lengths and colours. Here in Wageningen, I know some student don't care about what they wear but I enjoy selecting clothes and dressing decently every day. What I wear boosts my confidence and puts me in a good mood!' **@ EvdG**

'Who is up for developing the taxonomy of vegetarianism?'

A week without meat? No problem, reckoned blogger Geert van Zandbrink's parents, we'll just eat fish. This led to fascinating discussions at the dinner table about the wide variety of diets now seen in the Netherlands.

'Last week, I embarked full of enthusiasm on National No Meat Week. I had just returned on the flying climate destroyer from South America, a place where a meal isn't a meal without a piece of cow, chicken or alpaca on the plate. So when my social media alerted me to the fact that the entire Netherlands was going to be sticking to a world-saving diet for a week, I was delighted.
I sailed through the week like a true vegetarian without a single glitch — until Friday evening, when I honoured the home front with a visit. It goes without saying that I informed them in good time of my dietary requirements. My parents had willingly obeyed my instructions and come up with an alternative, one that fitted perfectly with a great Dutch tradition on Fridays: fish.

I don't have a problem with eating fish — far from it. But are you allowed to eat fish in National No Meat Week? When I visited the foundation's website, I found this question in the FAQ list. The answer was just as clumsily liberal as

the foundation: "Everyone should eat whatever suits their situation and decide for themselves what is feasible."

"AWARE CARNIVORE"

While savouring our fish dinner, we discussed the question of whether fish also counts as meat and "all the things we aren't supposed to eat". We concluded that we Dutch lack the vocabulary to denote precisely all the different kinds of vegetarians, flexitarians and vegans. Because it's not just about whether you eat meat or fish but also about whether you don't touch animal products such as gelatine, stick to a diet just for certain periods, eat organic meat



only, and so forth.

It is high time for a Wageningen student to draw up the taxonomy of Dutch vegetarianism, with typologies of all the different diets. I will get the ball rolling: personally, I'm type 34, which is "aware carnivore". That means I almost always eat vegetarian food but sometimes I enjoy a slice of meat from a local, sustainable and animal-friendly source.' *\mathbf{\textit{0}}

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.

Living with a Swedish family

'I wasn't very adventurous during my internship period in Uppsala. It was winter, it was cold, and it was sociable, but mainly indoors. I would sit cosily on the sofa with a cup of tea, looking at the snow outside. Not very exciting, perhaps, but it was nice. And of course, I didn't sit still all the time: it was lovely to go walking there, especially in the late summer.

I did a study at the university for six months, in the Population Genetics research group. That was a great workplace, with lots of other international students who I spent a lot of time with. I did research on butterflies and I had fairly specific learning goals. I especially wanted to get better at bioinformatics. That meant I was at my computer every day from nine to five. That bore fruit because I have now managed to get a PhD place in Wageningen. I think my clear choices for my internship must have helped with that.

BABY IN THE HOUSE

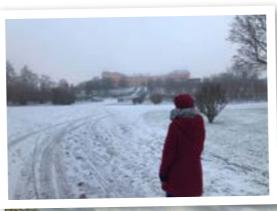
I also really wanted to experience what it was like to live abroad, how you adapt to that and how to deal with loneliness. Because I was certainly lonely at first. I was quite spoiled with my friendship group in Wageningen. In Uppsala, I had to do my best to get out and make contact with people. Luckily I was staying with a friendly family. I rented a room from a family with a baby who was six months old when I arrived. They had warned me about that, because not everyone can cope with such a hectic home situation. Luckily, I sleep deeply, because I was never woken up by the baby. Or maybe it was a very quiet baby.

More interviews on resource-online.nl

NO BREAD

The nice thing about staying with a Swedish family was that I learned more about daily life in Sweden. I often joined them for meals and I tasted Swedish specialities. We ate sushi regularly too, or they made fish dishes themselves. Apart from that, Sweden mainly has sweet stuff to offer. There were endless sweetshops and sometimes the supermarket was half full of sweets. Even the bread was sweet, so I didn't eat bread for six months.

In the streets of Uppsala I got the opposite of a feeling of claustrophobia: there were not enough people out and about. At first, that made me feel unsafe but after a while you get used to there being so few people around. Otherwise, Sweden is part of Northern Europe of course, so it's all pretty much the same.' **Q** AvdH







Wie? Annemiek Blasweiler (24), MSc student of Biology Wat? Internship at the Uppsala

Internship at the Uppsala University (UU)

Waar? Uppsala, Sweden



Announcements

WUR big band seeks trumpeter

The WUR big band 'Sound of Science' is looking for a trumpeter to play jazz, rock, funk and Latin. We rehearse every Tuesday from 17:30 to 19:30 in room 1 of Gaia. Come along and listen, take a look at us on Facebook or the website, or email leen. moraal@wur.nl

WWW.SOUNDOFSCIENCE.NL

Sandcastle Building Contest: registration open

Take part in a tough competition on 23 May at 12:30 pm, and become a sand sculpture master! Apply with a group of four WUR students, and battle for a great prize: a team outing to a beach club, beach lunch or dinner included. This free-of-charge Studium Generale activity is part of our sand festival, 21-28 May. Location: south entrance of Forum.

WUR.NL/STUDIUMGENERALE

Training on Presentation Skills and Nerves

This practical presentation training course is for students (BSc and MSc) who get very nervous before giving presentations. Marloes Harkema, an experienced skills trainer, will teach you strategies for being more at ease in front of a group. We will also practice using non-verbal communication, voice control and interaction with the audience. The course runs over three evenings: 8, 15 and 22 April or 11, 18 and 25 April. Max 8 participants per group.

WWW.MARLOFSHARKEMA.NI

Call for participants in TV programme about loneliness

Do you live alone and sometimes get overcome with loneliness? Or are you not sure how to make contact with other people? Do you have a busy social life but miss a real friendship? For the new six-part NPO 3 documentary series *Lonely me: VR*, I am looking for people aged between 18 and 35 who feel lonely and would like to do something about it. Does that sound like you, or someone you know? Send me an email: rishuveldhuis@xs4all.nl.

Journalism Fellowships

Are you excited about the opportunities that technology brings to the newsroom? Do you want to explore new storytelling formats, use data to uncover relevant stories or create engaging and inspiring content? The GNI Fellowship offers paid summer placements of eight weeks to journalism, technology or design students. This is a unique opportunity that can allow you to kick-start a career in the news industry. Depending on the needs of each newsroom, our fellows will research and write sto-

ries, contribute to open source data projects, create visuals and interactives, and look into data to accurately frame public debate. The cooperating newsrooms in the Netherlands are: de Volkskrant, NU.nl, VICE (EMEA).

WWW.JOURNALISMFELLOWSHIPS.EU

The search is on for the 100 most sustainable young highfliers 2019

The search for the most sustainable young highfliers in the Netherlands runs from 18 March to 26 April. Are you a young businessperson, professional or student, under 32? Share your story and enter the running before 26 April on dj100.nl. Do you know others who are working hard on sustainability and deserve a place on the list of 2019? Tip us off and we'll get in touch with them. Between us, we'll show that sustainability is possible. As a DJ100 member, you'll be

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DJ100.NL

Student Safaris Southern Africa

Would you like to join an adventure? This summer, several different student tours will be organized to Southern Africa (Capita Selecta, 3 ECTS). You will travel with enthusiastic and motivated students to explore African nature and wildlife. For more information, you are very welcome to attend the info meeting: Tuesday 2 April, 16:30-17:30, Forum building. For more info see twana.nl/en or send an email to studentsafaris@gmail.com.

Agenda

Thursday 21 to 4 April

FILM HOUSE MOVIE W

Another Day of Life: a Polish animation film about the civil war in Angola in 1975. Schweigende Klassenzimmer: a German drama about a school protest. Buddy: A Dutch documentary about six indispensable working dogs. No Data, No Signature: an Iranian drama about a medical examiner who may have been involved in the death of a boy. Eighth Grade: an American comedy about a 13-yearold girl in the last year before High School. Sunset: a Hungarian drama about a woman who goes back to her birthplace. Location: Wilhelminaweg 3A, Wageningen. €6.50/€5. movie-w.nl

Tuesday 26 March, 20:00-22:00

LECTURE BY DR CARLY MACHADO: RELIGIOUS NATIONALISM IN BOLSONARO'S BRAZIL

Brazilians' secular ideas of nation and nationalism were historically forged in a delicate process of negotiation with Catholicism and its role in the cultural, political and state formation of the country. But powerful religious identity shifts have been underway in the past three decades, playing a key role in power struggles and the public discussions about the future of the nation. What are these shifts and how have they figured in the recent 2018 electoral victory of the right-wing Presidential

candidate Bolsonaro? Dr Carly Machado of the Universidade Federal Rural do Rio de Janeiro (UFRRJ), Brazil, explores the emergence of Pentecostalism as Bolsonaro's new Public Religion in Brazil and the consequences of these developments for the future the nation. Organizer: Studium Generale. Venue: Impulse.

Wednesday 27 March & 3 April,

LECTURE SERIES 'HOW MUSIC WORKS' ON THE OCCASION OF THE CENTENARY OF WAGENINGEN CHOIR AND ORCHESTRA ASSOCIATION (WSKOV)

What drove the evolution of music? And how does it affect us humans, both as individuals and as societies? Explore what is known about the mechanisms of music in this programme organized in collaboration with WSKOV, and enjoy live music. In the first lecture on 27 March, 'Searching for the Origins of Musicality', Professor Carel ten Cate of Leiden University explores the driving force behind the evolution of music. Are humans the only musical animals? And do animals hear what we hear when listening to music? The topic of the second lecture on 3 April is the world of Neuromusicology. Dr Artur Jaschke (VU University Amsterdam & ArtEZ) elaborates on the effects of music on our state of mind and our functioning, and wonders if music can be as used as a substitute for medicine. Venue: Impulse.

WWW.WUR.NL/STUDIUMGENERALE

Saturday 30 March to 27 April HAPPIETARIA, POP-UP RESTAURANT

The restaurant will open its doors for the tenth time in a row, to raise money for a good cause. This year, the proceeds will go to a project by International Justice Mission: liberating child slaves from the fish industry in Ghana. Various other activities will be organized besides the restaurant, including 'All Wageningen bakes' on 30 March and a networking dinner in collaboration with Change Makers Wageningen on 9 April.

WWW.HAPPIETARIAWAGENINGEN.NL

Saturday 30 March, 10:00-18:00

RECLAIM THE SEEDS, REGIONAL EDITION IN WAGENINGEN

Do you want to celebrate the diversity of crops? Are you looking for rare seeds or interested in discussing seed-related issues? This year Boerengroep (Farmers' group) is holding a regional edition in Wageningen. Reclaim the Seeds is an event that combines exchange of seeds and information with discussion of political themes and practical workshops. Food is available all day. Admission on the basis of a donation. Location: De Hoge Born farm, Bornsesteeg 87, Wageningen.

WWW.BOERENGROEP.NL

Friday 5 April, 20:15

CONCERT BY HET WAGENINGS SYMFONIE ORKEST / HET ANDERE KOOR

HWSO/HAK will give a concert in the Johannes de Doper church, Bergstraat 17 in Wageningen. The programme includes Gabriel Fauré's *Requiem* and works by Ravel and Franck. The concert will be repeated on 7 April at 14:30 in Musis Sacrum concert hall in Arnhem.

WWW.HWSOHAK.NL

Saturday, 13 April, 10:00-18:00

ONE-DAY BASIC PHOTOGRAPHY WORKSHOP IN WAGENINGEN.

The workshop is for everybody looking for an introduction to the fascinating world of photography. It is designed for photographers of all levels, from beginners to those with some understanding of digital photography. You'll learn basic photography concepts, such as exposure calculation, ISO, white balance, depth of field, composition, and basic post-production. You'll also have the opportunity to practice your newly acquired skills. The workshop will help you to change the way you see. Photography is not only about technical sophistication and complicated equipment, but it is mostly about developing your creativity to see objects, nature and people from a different perspective. Venue: StartHub, Vijfde Polder 1, Wageningen.

WWW.MARCOMEGA.COM/WORKSHOPS

Colophon

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>>TYPICAL DUTCH



Even the traffic lights are efficient

In the Netherlands, if you want to arrive at the other side of the road before the pedestrian traffic light turns red, you must be sure to start walking as soon as the light turns green, and fast. Don't even think about checking your phone while you wait, or the possibility of something falling out of your bag while you walk; every second counts when crossing the street!

To be honest, it took me a long time to realize that the traffic light stays green for pedestrians for an incredibly short time. This is probably because in the Netherlands, starting to use the bicycle is like getting your first car elsewhere: it normally implies that you stop walking to get anywhere and go by bike instead.

I was in Amsterdam, where I was doing much more walking than I do in Wageningen, when I first noticed that Dutch efficiency was reflected even in the traffic lights. I was really surprised by how briefly the light is green, so I started taking notice of it in other places, included Wageningen. In fact, I was checking it out on almost all my limited walks, doing a kind of experiment. That allowed me to observe not only that the green light is indeed on for a very short time, but also that Dutch people were remarkably faster when crossing the street. It was quite easy to distinguish them from tourists in the big cities, as they were almost the only ones who could successfully cross the street while the green light was on.

So next time you walk somewhere, I encourage you to observe the efficiency of Dutch traffic lights for yourself! ② Melania González Torres, BSc student of Biology, from Spain

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.

'Don't even think about checking your phone; every second counts when crossing the street!'