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RESOURCE [EN]

For everyone at Wageningen University & Research

no 11 – 13 February 2020 – 14th Volume



**INTERNATIONAL
EDITION**

Cute or cruel?


Treating animals decently | **p.12**

Jan-Eise + IBK film freeze concentrator

WUR researchers work with all kinds of equipment. Meet researcher Jan-Eise Vuist, a PhD student at Food Process Engineering.



CONCENTRATED BY ICE

This is the only one of its kind: the film freeze concentrator that Jan-Eise is studying for his PhD. The apparatus has only just been unwrapped. Its task is to extract useful substances from waste streams by conducting them over freezing plates. Due to ice formation on the plates, a more concentrated solution is deposited. It already works on the lab scale. This machine will show whether it could work on an industrial scale. That would be fantastic as, theoretically, this method uses much less energy than existing concentration techniques.  RK, photo Sven Menschel

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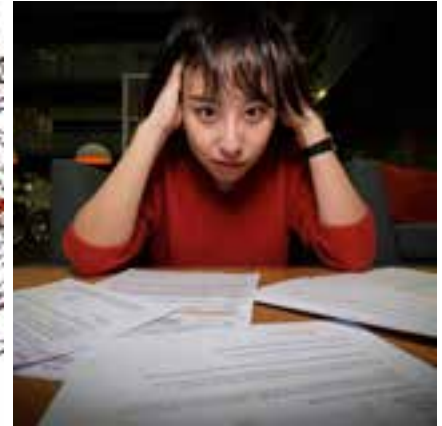
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PERSONAL DESK

Ten years ago, the so-called New Way of Working hit campus. No more personal desks, was the motto. The idea was that this would free up space, better accommodate the work and encourage cooperation. But the approach never took off WUR-wide. Now the shortage of space has forced the Executive Board to make another attempt. This time, the concept is called myWURspace (see page 20), but the idea is the same: no more workstations assigned to a specific person, just empty, flexible desks. And this time they mean it: all desks have to become a WURspace wherever possible. It won't affect me much as my WURspace is already optimal. Meaning a large desk piled high with papers, theses, dictionaries, mugs, pens, my phone, a stapler and other stuff. And all my colleagues within earshot. The perfect MyWURspace.

Roelof Kleis, science editor



>> **Rats and mice on farms carry more unpleasant diseases than was previously realized. | p.10**

CREATING SPACE ON CAMPUS

A new concept for the way office space is used is being introduced to promote cooperation and solve the problem of overcrowding on campus. A new research building is also planned.

The campus is bursting at the seams. To cope with growing student numbers, construction started recently on a third education building. The next step is to deal with the overcrowding on the work floor, in offices and in labs. To this end, an ambitious new plan for the next five years has been launched in consultation with the Science Groups.

EXTRA LAB SPACE

WUR research is flourishing. And that growth is expected to continue for the foreseeable future. A survey by the science groups showed that an extra 5500 square metres of lab space will be needed in the next five years. Some of that can be found within the existing buildings. Lecture

rooms in Zodiac, Radix and Axis will be freed up when the new education building is ready. But that is not nearly enough.

So a new research building is needed. These premises will probably be located on the edge of the campus to the east of the Bornsesteeg near the car park, says the Executive Board member responsible for the plans, Rens Buchwaldt. The building will be multipurpose and available to various science groups. The group with the biggest shortage of space is Agrotechnology & Food Sciences, at Food & Biobased Research in particular.

NEW OFFICE CONCEPT

The overcrowding in offices is not going to be solved with a new building but with a thorough makeover of the existing ones. The new office concept MyWURspace has been developed to achieve this (see too page 20). It is actually a revamped version of the open office idea that was launched on campus 10 years ago, in Actio

among other places. So MyWURspace is not entirely new. WEcR in The Hague and its Wageningen branch on the fourth floor of Atlas are already set up along these lines.

The core of the concept is that work spaces should be suited to the various activities people engage in during the course of the day. 'The intention of myWURspace is to offer you the space to do your work as pleasantly and as well as possible,' says Buchwaldt.

In specific terms, this spells the end of a permanent desk of your own, or even a fixed building to work in. Buchwaldt: 'Work is changing all the time. Collaboration is playing a bigger and bigger role. We are working less individually and more with other people and other science groups. And new, young people work differently and require a different office environment.' The concept, as part of the overall vision of building use, will be discussed with the WUR Council in the coming months. Buchwaldt aims to start implementing it after the summer. **RK**

AFSG GETS EXPERIENCED DIRECTOR

Sjoukje Heimovaara will become the new managing director of WUR's Agrotechnology and Food Sciences Group (AFSG) as of 1 March. Raoul Bino's successor has considerable managerial experience in both the private sector and science institutions.

Sjoukje Heimovaara (1965) was born in Friesland but has a Finnish surname as she is married to a Delft professor from Finland. She studied Plant Breeding at Wageningen and obtained a doctorate in Leiden. She then worked at TNO for 14 years and the plant breeding company Royal Van Zanten for 17 years.

DIRECT

WUR's new director is open, direct and rational. Last year, Heimovaara stepped down as CEO of Royal Van Zanten after a 'difference of opinion' with the investment company that had acquired the company. So she clearly knows what she wants

and is not much interested in the frills. But she *is* interested in knowledge and research. That is why she has held positions in Dutch Research Council committees, the employers' association VNO/NCW and Plantum, the plant breeding sector association.

PROFILE

She became a member of the Advisory Council for Science, Technology and Innovation (AWTI) four years ago. Last year, an AWTI committee she headed issued recommendations on higher education. She concluded that there was increasingly little difference between academic and applied universities, in part because of the funding system. 'Everyone is chasing the same thing.' She recommended introducing profile-based funding so that academic and applied universities seek to differentiate themselves more and collaborate more. **AS**



PHOTO: GUY ACKERMANS

DRAWING THE LINE?

It was all just acting when PhD student Suzanne was sexually assaulted by her supervisor Loek. But the impact of the scene was clear from the shocked faces in the audience. Last Thursday, during WUR's first Diversity Day, sexual intimidation and the abuse of power were addressed through the play *Me Too: Scientific and Sexual Harassment in Academia*, performed by The Dutch Actors Society. An important topic, which is surrounded by taboo. Partly because people don't always dare to talk about what happened to them for fear of the consequences – or indeed the lack of consequences. Sexual assault is of course an extreme example of unacceptable behaviour, but the play was also about 'mild' forms of it – an arm around a shoulder, a joke about a 'poster girl presentation'. After the show there was a discussion with the audience. How should we deal with this? How do we prevent it? Where do you draw the line? **TL**



PHOTO: SVEN MENSCHER

CAREER PROSPECTS FOR LECTURERS

In early February, the WUR Council agreed to an Education Career Path. This means the university now offers lecturers a new, alternative career path.

Up to now, the only way university staff could get promoted was via a tenure track in which they were assessed mainly on their research performance: the number of publications and PhD students. Now there is the option of an Education Career Path. This scheme is important for the increasing number of lecturers taken on by the university in recent years to cope with growing student numbers. In 2014, lecturers made up only 10 per cent of university staff but that figure had grown to 20 per cent in 2019. These lecturers are often on temporary contracts.

CRITERIA

In the Education Career Path, staff can get a promotion if they develop their teaching skills. They are assessed on the basis of a checklist with no fewer than 24 quality criteria. Lecturers do not need to satisfy all 24 criteria to be promoted: the checklist serves as a source of inspiration for the lecturer and their manager so that they can decide jointly which criteria apply in this specific case. Lecturers are eligi-

ble for this career path if they work at least 20 hours a week and spend a maximum of 30 per cent of their time on research. They can decide themselves when they want to be assessed for promotion.

GROWING INFLUENCE

The idea behind the Education Career Path is that the lecturers will be given more and more influence over education in Wageningen as they develop. Whereas new Wageningen lecturers will mainly be teaching, over time they will become more involved in the development of the education provided by chair groups and in programmes. They will expand their skillset for conveying knowledge to both Bachelor's and Master's students and will eventually develop entire courses. Furthermore, 'senior lecturers' will be involved in teaching evaluations and discussions about teaching methods.

For the assessment, lecturers have to compile a portfolio of evidence showing why they deserve promotion. The portfolio should always include a list of teaching activities, their own assessment of their development as an educator, student assessments and evaluations by colleagues. This will let lecturers gain promotion step by step from Lecturer 4 to Lecturer 1.

AS

© COLUMN | VINCENT

McDonald's

Millau, France, 1999. McDonald's is about to open a branch, but local farmers get there first. They park their tractors next to the brand-new building, tear the place apart and start handing out their own wines and cheeses. A protest against globalization and for good taste. Wageningen, the Netherlands, 2020. McDonald's still hasn't opened a branch here. It almost happened three years ago, but the municipal council blocked it. Two Wageningen secondary school students are not having it anymore, and have launched a petition to get the fast food chain to their town.

'What products could Wageningen offer as an alternative to the ubiquitous Big Mac?'

The protest in Millau took place 20 years ago last summer. Reason enough for the Dutch newspaper *NRC* to interview the people involved. How did it all end, down there in France? Well, the McDonald's in question opened with a slight delay and is still in business. The activist farmers were sentenced for vandalism, but to this day they prefer to describe their action as 'dismantling'.

Back to Wageningen. Whether Roos and Sveva will get their way is anyone's guess. A much more interesting question is what products Wageningen could offer as an alternative to the ubiquitous Big Mac. In the spirit of Millau, we have organic wine from the Wageningse Berg and cheese from the Binnenveld, of course. But we've also got beer made of grain from the Wageningse Eng, meat from cattle grazing in the water meadows of the Rhine, and – it was discovered in early February – truffles from the woods. All in all, very reassuring. **B**

Vincent Oostvogels (24) is exploring the delicate interface between nature management and food production through his two Master's programmes, Forest and Nature Conservation and Animal Sciences



UPSCALING FOR MEAT SUBSTITUTE START-UP

Wageningen start-up FUMI is set to produce proteins for vegan meat substitutes on a bigger scale. Two investors have invested 500,000 euros in the company.



PHOTO: GUY ACKERMANS

The market for vegetarian and vegan food is growing fast but food companies are facing the difficult question of how to replace the chicken protein in food products with vegetable-based proteins. FUMI Ingredients says that it has developed a sustainable and relatively cheap production method for vegan proteins. Several major food companies have already expressed an interest in their proteins, says the start-up.

ALGAE

The new technique lets FUMI Ingredients produce any protein that is requested from microorganisms or algae. The start-up run by Edgar Suarez Garcia and Corjan van den Berg has validated the technique in the lab and now they want to scale up the production process to the

factory level. On 30 January, FUMI announced that two investors, Innovation Industries and Shift Invest, are jointly providing half a million euros for these production operations.

PHD RESEARCH

The new production method was developed by Edgar Suarez Garcia as part of his PhD research in the Bioprocess Technology chair group. After he received his PhD, he and his co-supervisor Corjan van den Berg decided to start a company to apply the method, which had been patented by that point. They still receive support in their research and development from the Bioprocess Technology group and from WUR's AlgaeParc. Last year, StartLife helped FUMI Ingredient set up and develop the company. **AS**

ARTIST ARNE HENDRIKS IS INSPIRING PROTEIN RESEARCHERS

WUR artist in residence Arne Hendriks says art and science go together perfectly. Over the next few months, he will help scientists to look at the transition to a more plant-based diet from a different perspective. On 6 February, he gave his inspiration talk as part of Protein Transition Community Day.

'I am an artistic researcher,' says Hendriks. 'That means I use artistic methods for my research rather than scientific methods.' Hendriks doesn't make sculptures or paintings: 'It's much more about the stories, ideas, presentations, conversations, encounters and hopefully the inspiration. Sometimes all I do is to create space for other people to shine or to meet each other.'

In his talk, Hendriks introduced eight archetypes that he had come up with as a way of collating, exploring and understanding the stories about the protein transition. They included the 'ocean farmer' who farms at sea, growing

seaweed and algae, and the 'chick-etarian', who believes a visit to Kentucky Fried Chicken can save the world. With 'The Incredible Shrinking Man', Hendriks is continuing with the project of the same name that he started 10 years ago. 'This is a central theme in my work. The Shrinking Man is based on the naïve idea that we human beings need to become smaller, because then we won't need to consume as much and we'll be more capable of living in equilibrium with the planet.'

BUBBLE

Gijs Kleter of Wageningen Food Safety Research, who works on the safety of novel foods and GMOs, thinks it is a good idea to have Hendriks involved in the protein transition programme. 'Because he helps you to see it through a different lens. That produces new insights and ideas. It draws scientists out of their bubble.' Food researcher Diederik Esser of Wageningen Food & Biobased Research thought at the start of the

presentation: 'What's all this about?' But as the talk progressed, he was won over. 'I see a role for Hendriks in putting the protein transition on the agenda. He can get people talking about it.' Since September 2019, Hendriks has been spending two days a

week on Wageningen campus in an arrangement due to last eighteen months. He feels very welcome. 'When you are doing scientific research these days, there is not much room for stepping outside your own straight lines, whereas scientists are generally very creative people. I try to provide a creative space they can step into, and where we can collaborate.' **AJ**

'First I thought: what's all this about?'



PHOTO: TESSA LOUWERENS

SHORT-HAUL FLIGHTS A THING OF THE PAST

Anyone needing to go to Hamburg or Lyon for work purposes should go by train. If it's up to the Executive Board, that is. A new policy discourages air travel.

Train travel should become the norm for shorter trips that take six hours or less. For slightly longer journeys of six to eight hours, the train is the preferred means of transport and flying is the second-best option. This change to the travel policy is in line with the university's sustainability goals, and with the wishes of many staff. But flying will still be possible for short distances when there are 'exceptionally good reasons' and with the boss's approval, says Rens Buchwaldt of the Executive Board. 'At the end of the year, we would like to evaluate

those exceptional cases to see how often, and why, people still opt to fly.'

200 TONS OF CO₂


WUR staff fly about 10,000 times per year for work purposes, and more than half of these trips are within Europe (the figures are from 2017).

Train connections across Europe are not optimal, so only a small proportion of these journeys are within the limit of six to eight

WUR staff fly about 10,000 times per year for work purposes

hours. If we make those trips by train instead of by plane, we'll save 200 tons of CO₂ per year – as much as the emissions of 1400 flights to Paris, or of 42 households in a whole year.

REDUCING OUR FOOTPRINT

Reducing WUR's carbon footprint is not the only aim of the new policy. 'We also want people to think about the need for their trip,' says Buchwaldt. 'Is it really necessary? And do several people need to go or is one person enough? And we hope we can contribute to making international train travel easier and more efficient. WUR cannot do that on its own, but by being part of a growing market for train travel we can help ensure it improves.' 

WUR GOES INTO HYDROGEN

If it is up to WUR and TNO (the Netherlands Organization for Applied Scientific Research), it will not be long before the clay on the fields at ACRRES in Lelystad is being ploughed with machines running on hydrogen. WUR and TNO have launched a trial project on green hydrogen on farms. An installation for the small-scale production of green hydrogen is planned at ACRRES, WUR's Application Centre for Renewable Resources. It will be a kind of mini-hydrogen factory with which farmers can produce hydrogen using the electrolysis of water with solar or wind energy.


Because the Dutch electricity network faces capacity problems in several places (mainly in rural areas), it is getting harder for farmers to sell the electricity they are generating. An alternative is to use that electricity to produce their own hydrogen. In theory, hydrogen is a good alternative to diesel, and machinery run on diesel is one of the biggest energy guzzlers on farms. 'So small-scale hydrogen production is a good fit with the push for sustainability that agriculture has ahead of it,' says Chris de Visser, open cultivation business manager at ACRRES. This five-year project is due to start this summer and will be financed by the Ministry of Economic Affairs and Climate.  ME



PHOTO: MARIKE ENTER

SUPER-SPUD ON ITS WAY

The growing world population is a threat to food security. One solution lies in a shift from the consumption of animal proteins to plant proteins. Increasing the protein content of crops such as potatoes is one option for this, discovered PhD candidate Michiel Klaassen.

At the Laboratory of Plant Breeding, Klaassen investigated whether the protein content of potatoes is affected by biological mechanisms and whether this is heredi-


tary. An extensive genome analysis of potato varieties revealed that the gene StNPF1.11 is associated with the protein levels in potatoes. The gene codes for a nitrate transporter. 'This transporter takes nitrate up from the soil and transports it through the plant,' explains Klaassen. Given that nitrate is an important building block for proteins, this gene was a promising candidate for further study.

HEREDITARY

Next, Klaassen activated the selected gene in the entire potato plant so that the plant

produced more of the nitrate transporter. That doubled the protein content in the potato tuber. 'We saw this increase mainly in young plants,' says Klaassen. Although the focus will ultimately be on fully grown potatoes, the study outcome still offers new insights. 'Protein content is a complex property but we have now shown that this property is to some extent hereditary,' says Klaassen. He suspects that protein content in fully grown potatoes is also regulated at the genetic level. And that is important because it means plant breeding companies can optimize this property.

Potato plants with a higher level of nitrate transporter turned not only to contain more protein but also to be bigger. Moreover, their leaves contained more chlorophyll. That is not so surprising, says Klaassen. 'Nitrogen in the form of nitrate is important for the formation of chlorophyll. Adding more nitrate transporter probably means the plant takes up more nitrate, so there is more nitrogen available for the formation of chloroplasts.'

In his study, Klaassen activated the StNPF1.11 gene in all parts of the plant. That obviously led to an unnatural situation with possible adverse side effects. That is why Klaassen advises only activating the nitrate transporter in specific parts in follow-up research, for example only in the tuber.  NvW



'We have proved that protein content is partly hereditary'

'A PLAGUE OF LOCUSTS IS A LOGISTICAL NIGHTMARE'

Africa has been hit by a plague of locusts of Biblical proportions. Resource spoke to Arnold van Huis of the Laboratory of Entomology. 'To successfully control a plague, you have to kill 90 to 95 per cent of the population.'

HOW DOES SUCH A PLAGUE START?

'Desert locusts normally live a solitary life. If there is more vegetation available for them to eat due to favourable weather conditions, the locusts reproduce faster. If that is followed by a dry period, the areas with vegetation shrink and the locusts are then concentrated in those places. Another reason why locust populations become concentrated is if they encounter a barrier such as mountains or the Red Sea. Once they are crowded together, the locusts become gregarious, meaning they give up their solitary habits and start swarming.'

WHAT IS THE IMPACT OF SUCH SWARMS?

'A locust eats its own weight in plants, about two grams, every day. A ton of locusts, which


would only be a small part of a swarm, can consume the food of 2500 people in a single day. One swarm can cover 100 square kilometres and advance at a rate of 100 to 150 kilometres a day. And wherever they go, they also lay eggs — about 200 per female. In this way, the population increases by a factor of 10 every few months.'



HOW CAN YOU COMBAT A PLAGUE LIKE THIS?

'It's difficult. Pesticides are the only method. To successfully control a plague, you have to kill 90 to 95 per cent of the population. A couple of pesticide-spraying planes won't be enough. What is more, many of these countries do not have the capacity or know-how. It's a logistical nightmare. The best scenario is for the weather conditions to change — for it to get colder, for example.'

COULD SUCH A PLAGUE APPEAR IN THE NETHERLANDS, FOR INSTANCE DUE TO CLIMATE CHANGE?

'No. There are only four species of locusts in Africa that can swarm. Those swarming species are not found in the Netherlands. I don't find it plausible anyway that climate change causes the swarming. We had five such plagues before 1963 and two since. If it was related to climate change, I would expect the number of plagues to increase.'  TL

STREAM EXPERT UNDERSTANDS MEANDERING

How do you restore the meandering path of a stream? Stream expert Jasper Candel developed a channel path predictor as an indispensable aid.

The Netherlands has countless brooks, streams and rivers, large and small, that wind their way through the countryside. All those meandering paths look the same to laypeople, but PhD candidate Jasper Candel (Soil Geography and Landscape) knows better. Each bend has its own history. He studied the winding paths of the Dommel, Drentsche Aa and Overijsselse Vecht rivers.

SOIL KNOWLEDGE

The three rivers he studied flow in valleys with different soil compositions. That was a deliberate choice, explained Candel, as precisely those differences between sand, loam and clay determine to a large extent where the water flows. According to Candel, restoring streams is pointless without a thorough knowledge of the morphological and geological aspects of the soil.

'At present, bends are reintroduced wherever there is room, without knowing anything about the natural processes. They look at old maps to determine the meandering path 200 years ago and that becomes the reference point. But does the shape back then fit today's conditions? Rather than taking a reference point, you should restore the process that led to those bends. You have to un-

derstand how a stream got those bends if you are to avoid having to actively maintain the stream for decades to come.'

Candel surveyed the path taken by the three rivers in meticulous detail. He delved deep into the streams' geological history using earth drilling, radar measurements, radiocarbon dating and optically stimulated luminescence. Candel 'understands' the streams. He then used that understanding to create a channel path predictor, a model that predicts the path taken by any alluvial stream based on a few variables.

ALLUVIAL STREAMS

'Alluvial streams are streams that shape their own flood areas through the transport of sediment,' explains Candel.

'Mountain streams don't fit in this category, for instance.' Give him the soil composition, the valley's gradient and the volume of water flowing through it and his model will calculate the probability of a certain meandering path. According to Candel, the biggest cost item in restoring streams is buying out farmers. 'The question is whether that extra land is needed, whether the stream *can* meander in the way they want.' Candel also questions the shape given to the new bends. Those bends are mostly simple shapes whereas the natural path is often complex with sharp angles. Candel says that produces more interesting nature. **© RK**



PHOTO: SHUTTERSTOCK.COM

VISION

Vaccine against coronavirus



The coronavirus 201-nCoV has the world in its grip. Jeroen Kortekaas, extraordinary professor of Veterinary Arbovirology and on the staff at Wageningen Bioveterinary Research in Lelystad, explains how you make a vaccine.

How do you make a vaccine?

'The classic method is to culture the virus in the lab, deactivate it and then inject it. There are many different modern methods of developing vaccines. The CEPI (Coalition for Epidemic Preparedness Innovations) has recently financed three projects for developing a vaccine against the coronavirus. The first one is a DNA vaccine.

'There will certainly be another coronavirus'

In this method, you build a fragment of DNA that codes for a protein in the virus and use it as a vaccine. The body then manufactures the alien protein, setting off an immune response. A second, comparable method is based on RNA. The third method is known as a subunit vaccine. You make the virus protein itself in the lab and then inject it.'

Is there a difference?

'All three are synthetic processes, each with its own pros and cons. One is faster but less effective. The other takes longer but produces a very effective vaccine. The coronavirus is a nice exercise in seeing how fast we can get a vaccine onto the market. CEPI aims to have developed a vaccine four months after identifying the virus. But that is not the end of the line. A crucial factor is getting the vaccine accepted by the authorities. Normally that kind of admission process takes years. But we don't have time for that now.'

Are you worried about the coronavirus?

'No. It looks as though its virulence, the number of severe cases and deaths, is not extreme. But the virus is fairly contagious, so it may spread all around the world. In the case of SARS, the first coronavirus that caused problems among humans, the outbreak was quickly brought under control. Then came MERS, which was more deadly but fortunately not as contagious. There will certainly be another coronavirus, and it could combine the contagiousness of the present virus with the virulence of MERS. So the present efforts to combat the virus will prove very valuable in the future.' **© RK**

NWO GRANT FOR RESEARCH ON REDUCING FOOD WASTE

One third of all food is wasted worldwide. Researcher Erica van Herpen has now received a grant of one million euros from the Dutch Research Council (NWO) to study how we can reduce food waste.

A huge amount of food is wasted, mostly by consumers in the home. 'That is food that has already been grown, transported, cooled and stored. All for nothing if it is chucked in the rubbish bin,' says Van Herpen, associate professor of Marketing and Consumer Behaviour.

In the new project 'Food Waste: from Excess to Enough', Van Herpen and her group will be looking for a new system that minimizes waste. While most waste takes place in the home, Van Herpen stresses that this does not necessarily mean that is where we should look for the solution. 'Oth-

er factors play a role too. Take the manufacturers that produce packs with portions that are too big for a one-person household. We are considering all the actors in the food supply chain.'

FUTURE SCENARIOS

Over the next few years, the researchers will be investigating different scenarios for the food system of the future. The focus will be

'One possible scenario is having milk reordered automatically whenever it runs out'

on consumers (the demand side) and the retail trade (the supply side). Consumers because households waste most food and the re-



PHOTO: SHUTTERSTOCK.COM

tail sector because it is a key player in the supply chain.

Van Herpen: 'You could think of a future in which supermarkets sell complete meals rather than ingredients. Or a scenario in which milk

is reordered for you automatically whenever you are on the point of running out. The ultimate goal is to find the scenario one that everyone supports and that we could put into practice.' **TL**

FARM RODENTS SOURCE OF DISEASES

Rats and mice on farms carry more unpleasant diseases than was previously realized, according to research by PhD candidate Inge Krijger.

Rodents can spread zoonoses, infections that can be transmitted from animals to humans. Krijger studied rodents that had been caught in and around farms, mainly pig farms. She found the bacterium *Leptospira*, which can cause Weil's disease in humans, the parasite *Toxoplasma gondii* — aka the 'cat litter parasite' — which is dangerous to pregnant women, and the intestinal bacterium *Clostridium difficile*, which causes severe diarrhoea.

ABATTOIR

The *Toxoplasma* parasite was found in pigs in an abattoir belonging to meat producer Vion. Krijger visited five clean farms and five infected farms supplying Vion and caught mice and rats there to see whether they were infected with the parasite. To her surprise, they were not. Later, she discovered the probable cause. She had also tested rats from Texel and it turned out they were infected with *Toxoplasma*. Those rats were caught in a recreational area with a lot of stray cats. 'Rats can be carriers but cats are the

ultimate hosts for *Toxoplasma*.' She did not come across any cats on the pig farms. 'The pigs were probably infected with *Toxoplasma* from a supplier with cats.'

URINE

It was already known that the bacterium *Leptospira* is widespread among brown rats. However, Krijger found the bacterium in other rat species and in mice. The bacterium spreads via the rodents' urine and via the drinking water of livestock. *Leptospira* was more prevalent on farms than the researchers had expected. As regards *Clostridium*, sometimes called the hospital bacterium, Krijger found a type in the rodents that had not previously been described in humans.

Krijger believes it is important to do more in terms of prevention. 'Wherever humans are, rats and mice are found too. They need to be tackled so that they don't become a pest.' **AS**



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PROPOSITION

'Doing a PhD is just like a triathlon'

Writing is not her strongest point, Paula Harkes discovered when she was working on her PhD. But her experience as a triathlete taught her that this was not a problem. Because, as one of her propositions states, 'Triathletes will finish a PhD with more ease, knowing that you don't have to excel in every part to get on stage.'

'When I was working on my PhD I started taking part in triathlons and I trained about six times a week. I am good at cycling, but I had never swum competitively and running wasn't my strongest suit. In a race, I was one of the last out of the water, but I was in


third place on the podium at the end. It's the same thing in PhD research. I don't like writing much, but I can structure my work well and formulate good research ques-

'There is a general belief that a PhD researcher has to be good at everything'

tions. There is a general belief that a PhD researcher has to be good at everything. But I don't think it's that extreme. The main thing is you have to persevere. Writing is my



PhD candidates have to include a handful of propositions with their thesis. In this feature, they explain their most provocative proposition. This time it's Paula Harkes, who got her PhD on 10 January for a study on differences between organic and conventional farmland in the soil around crop roots.

swimming event. The further you go in the academic world, the more is expected of you, and that includes writing and publishing. But I think you should focus mainly on what you are good at. If you have good ideas but you can't express them on paper very well, that doesn't mean you shouldn't go on tenure track. You must make sure you arrange to have the resources to help you cope with it. When I was writing I asked the people around me for feedback. I don't think the academic world pays enough attention to that. Which is a pity, because someone who isn't very good at writing, for example, might well come up with that one good idea that brings in a grant.' 

Animal etiquette according to WUR and UU

Animal love

The relationship between humans and animals is complicated. We love them and live with them, but at the same time we use them, modify them and kill them. The question of whether we treat animals decently and ethically is bothering us more and more. At CenSAS, everything revolves around that question.

text Tessa Louwerens *photo* Shutterstock.com



‘People expect a lot from animals, really,’ says Ludo Hellebrekers, director of Wageningen Bioveterinary Research and co-founder of CenSAS, the Centre for Sustainable Animal Stewardship. CenSAS, a collaboration between Utrecht University and Wageningen University & Research, does research, teaches courses and facilitates a public dialogue on issues of human-animal relations, animal welfare and animal ethics. ‘At CenSAS we get together with relevant parties to think about how people and animals can live together in a sustainable and ethical way,’ says Franck Meijboom, associate professor of the Ethics of Human-Animal Interactions at Utrecht University and head of CenSAS.

HUMANS AND ANIMALS

The Dutch give increasing importance to animal welfare, shows a public survey by the government’s Council on Animal Affairs in 2019. Nearly everyone said that people have a moral obligation to treat animals well. As many as a quarter of respondents thought humans and animals are equal. ‘Animals are increasingly believed to have self-awareness and a will of their own, with the capacity to strive to achieve goals and a wish to lead a happy life,’ says Meijboom. At the same time, the public debates on animal-related issues are becoming more heated and more polarized. Some people think we should not eat animals, while others see them primarily as a source of income, and there is also a group of people who think animals should have the same rights as humans. Meijboom: ‘With so many interests and views on the right way to treat animals, it is not easy to find solutions that everyone involved can live with.’

PESTS, LAB ANIMALS AND PETS

How we look at animals depends on the context. In the Netherlands, we don’t think it’s OK just to kill dogs and cats, but we have very different ideas about killing mosquitoes, pigs or mice. Rats are perhaps the most revealing example of our ambivalent attitude to animals: some rats

are loved as pets, some are used as lab animals, and some are poisoned as vermin. Why do we think in such different ways about the same animal species? Meijboom: ‘We are very good at framing animals.’ Give an animal a name and it’s your best friend. But label it as vermin, and most of the arguments about animal welfare disappear into thin air.

PRODUCTION ANIMAL

You come across issues of animal welfare everywhere, but at the moment it is the agriculture sector that is coming in for the most scrutiny. Take the veal industry, which is criticized on several counts, including the long hours the calves spend in transit from other countries to the Netherlands, where they are fattened. Meijboom: ‘Topics like this get into the

‘Animals really are not better off if we project our needs onto them’

media, although the coverage can be incomplete. That is a pity, but on the other hand it can focus the discussion. I think it is important not just to focus on what is wrong with the sector now, but above all to look at how we can arrive at sustainable long-term solutions. To do that we must look at the entire supply chain, including the consumer, to find out where the risks lie and how we can make improvements for people, animals and the environment by working with stakeholders such as breeders and transport companies, retailers and livestock farmers.’

OVERFED CHICKENS

CenSAS also wants to make a point of tackling less widely publicized problems. Overfed battery broiler chickens have been in the news a lot, but you seldom hear anything about

the hens and cockerels at breeder farms. Meijboom: 'Just like their offspring, the parent animals are genetically selected to grow quickly. In the case of the chicks, the feed is adjusted to do that, but that is not possible with parent birds: too much feed reduces their fertility. And because they live longer and therefore go on growing for longer, they would get too heavy, which causes health problems.' It can be assumed that the parent birds are constantly hungry. CenSAS researches the underlying questions: is it, for

'A lot of animals can cope amazingly well with people's shortcomings'

instance, possible to formulate sustainable breeding objectives that reduce or preferably do away with such problems? CenSAS engages in discussions about this with poultry breeders, poultry farmers, retailers, animal scientists and animal welfare organizations. Hellebrekers: 'We don't always have readymade answers. We put problems on the agenda and open them up for discussion. If you look at them from a broader perspective, and with as many of the relevant parties as possible, you stand a better chance of making improvements. In the end the point is that in some discussions, more attention should be paid to animals than they come in for at the moment.'

ENGINEERABLE ANIMALS

As new techniques emerge, new questions arise. An example would be CRISPR-Cas, which makes it possible to make very precise changes to the genome of animals. 'Through

selective breeding, people have of course been changing the genes of animals for a very long time,' says Hellebrekers, 'but with CRISPR-Cas it can be done much faster and more precisely.' Because genome adaptations can theoretically be applied on a large scale, the subject is currently high on the agenda. Meijboom: 'You can see a similar debate blowing up to the one in the 1990s about the bull Herman, the first genetically modified bull whose offspring's milk contained the protein lactoferrin. But while the biggest issues at that time were consumer safety and cost-effectiveness, today we debate animal welfare, and whether it's OK to make changes to an animal's DNA – and if so, under what conditions.'

Meijboom emphasizes that you cannot easily categorize techniques such as CRISPR-Cas as 'good' or 'bad'. 'The discussion also focuses on the applications of the technique. 'Animal welfare could be improved through CRISPR-Cas, for example by building a hornless gene into the cow's genome so that calves don't have to be dehorned anymore. But it that really in the animal's interests? Or should we look for ways of adapting our farming methods to the animals instead of adapting the animals to our wishes? And what if CRISPR-Cas was not used to improve animal welfare but just to boost production?'

But there is a group of people for whom it makes no difference what a technique like this is used for, notes Meijboom. 'They think that it is never acceptable to tinker with an animal's genes, because that is not up to humans or because it encroaches on the animal's intrinsic value. This leads to a completely different kind of discussion, about the value of the animal and of life, and what is the responsibility of humans in this regard.'

GOOD INTENTIONS

In the case of pets too, wellbeing is often problematic. 'The most appalling things happen to pets, often with the best of intentions,' says Hellebrekers. 'Most pet rabbits, for instance, are housed in a way that doesn't meet their natural needs at all. They are kept alone in small cages, with very little scope for their natural behaviour. The same goes for horses who are alone in a field, whereas, like rabbits, they are social animals. People mean well, but in this case they haven't got a clue about the animal's natural needs,' says Hellebrekers. 'Animals are definitely not better off when we project our own needs onto them.'

HUMAN YARDSTICKS

When people attribute human traits to animals, the welfare of the animals can suffer. Cat food with vegetables is an example of that kind of anthropomorphism. As a carnivore, a cat has absolutely no need for vegetables. But it goes way beyond that. Take the breeding of dogs with flat noses, because their flat faces melt people's hearts. That 'cute' appearance is why they suffer all kinds of health problems, such as chronic breathing difficulties.

'We project ourselves on our animals,' says Meijboom. 'That is very human, but we should watch out that we don't use our own human yardsticks to decide what is good for an

PEST ANIMALS PROJECT

Does a wild rat have less of a capacity to suffer than a pet rat or a lab rat? No, of course not. And yet it is obvious that some rats are better off than others. 'For lab animals there is a lot of legislation about animal welfare,' says Meijboom. 'And the welfare of pet rats is important to their owners – it is questionable whether that always works out well in practice, but that's another matter. But there are no arrangements for pest animals.' CenSAS is currently working on a project about pest animal control. 'We talk to researchers, pest animal controllers, animal conservationists, governments and representatives of the food industry and agricultural sector. They all seem to feel that more attention should be paid to welfare in pest animal control. After we have talked about the dilemmas they face, we will put our heads together to see how this could be improved in practice.'





◀ 'People often haven't got a clue about the animal's natural needs,' says Ludo Hellebrekers.

animal. Take a horse standing outside in the snow. A sorry sight? A horse with a winter coat is not in the least bothered by snow; but it does miss company of its own kind.' Anthropomorphism does not always cause problems straightaway, though, says Meijboom. 'A lot of animals can cope amazingly well with people's shortcomings.'

BIASED VIEW

According to Hellebrekers, the challenge is to bring these different opinions together. 'When we talk about animal welfare, it's a matter of frames. Your norms and values, and your relationship with animals colour your ideas about welfare. CenSAS is not just about animal welfare. It is broader than that: it is about all aspects of our relationship with animals. What different views are there? Where do they conflict? It's important to get that on the table before you can move on.'

Hellebrekers thinks it is important that all parties in this kind of dialogue get the same respect and right to speak. 'This is not just about academic arguments. They won't do away with the general public's concerns. Quite the opposite, in fact.'


Meijboom: 'In the end what we need is to find sustainable

solutions for relating to animals ethically. Not just applying sticking plasters, but looking for future-proof solutions. And we need to consider economic and veterinary interests, as well as the moral, political and emotional aspects. In the final analysis, both humans and animals stand to benefit.' 📍

YOUNG ANIMAL PROFESSIONALS

Besides public dialogue, CenSAS focuses on training programmes for future animal professionals such as vets and animal scientists. 'These young professionals will end up working in a society that expects them to take a position on issues such as the future of livestock or animal experiments,' says director Ludo Hellebrekers. 'That calls for training programmes that pay attention to the social dimension and not just to technical skills.'

'BE A FISH!'

In the winter AID, new students were introduced to the university, the campus and each other. On Tuesday, it was time for Crazy 66: 66 assignments to complete with your group. Some AID participants got *seriously* familiar with the campus. Such as this group. No, they are not searching for lost contact lenses or woodworm; they are doing assignment no. 1: 'Be a fish on the bridge between Forum and Orion.'  LZ, photo Guy Ackermans





Yes they can!

Plants could capture more sun

Plants use photosynthesis to transform energy from sunlight into chemical energy. But the process is a lot less efficient than it theoretically could be. Researchers have recently shown that it is possible to increase the efficiency of photosynthesis in model species using genetic engineering. Now they want to build more efficient photosynthesis into food crops.

text Albert Sikkema photo Tom Theeuwen

Plant researchers have rapidly learned enough about photosynthesis to be able to suggest effective options for improving the process in plants. 'We have proof of principle that we can improve photosynthesis', says WUR researcher Jeremy Harbinson, who works on photosynthesis in the Biophysics chair group.

Harbinson is co-author of a recent publication in which geneticists from Wageningen described how they were able to improve the photosynthesis in the model plant *Arabidopsis thaliana*. He is also aware of the recent American research in which scientists were able to boost the photosynthetic capacity of tobacco. This research was done by the research group led by Donald Ort, Biology professor at the University of Illinois. Ort will give a guest lecture in Wageningen at the *Dies Natalis* on 9 March.

HOW DOES IT WORK?

A brief explanation of photosynthesis before we go on. A plant cell looks like a green soup with a nucleus that contains most of the DNA, the chloroplasts - the seat of photosynthesis -

in which sunlight is used to drive the formation of sugars from CO₂, and the mitochondria where respiration occurs. The chloroplasts and mitochondria were originally bacteria that were long ago incorporated into plant cells.

'Organelles in a plant have successfully been replaced by organelles from another plant'

The conversion of sunlight into energy in the plant cells does not always proceed without a hitch. The plants produce an enzyme called Rubisco, which catalyzes the conversion of CO₂ from the air into organic molecules. But in about 20 per cent of cases, the enzyme catalyzes a reaction between oxygen and the target molecule, producing toxins and necessitating a detoxification process. The result is a big loss of photosynthetic efficiency. To improve photo-

synthesis, Ort's research group silenced a gene in tobacco plants that was important in the detoxification process and replaced it with alternative detox genes. As a result, the tobacco plants produced 40 per cent more biomass. Another group at the University of Illinois, including WUR alumnus Wanne Kromdijk, found a different way to improve photosynthesis. Plants have a mechanism for protecting themselves against intense sunlight. They temporarily reduce the efficiency of photosynthesis in order to protect their leaves against radiation. On a cloudy day, plants continuously switch their sun protection tool on and off. This switch is quite slow, however, while changes in sunlight can be fast. The Illinois group were able to speed up the switch. As a result, plant growth improved by 10 to 15 per cent.

BREAKTHROUGH

The aim of these interventions is to increase food production in order to feed the growing world population. The researchers haven't reached that goal yet, though. The improvements in photosynthesis have so far been made in model plants like *Arabidopsis* and tobacco,

and not in crops. Secondly, the pioneering American research made use of genetic modification to improve photosynthesis. This would conflict with European legislation.

'For that reason,' says Harbinson, 'the Wageningen approach is to use natural variation to improve photosynthesis. To do this we first have to identify natural variation in photosynthetic traits within a plant species and then find the genetics behind this variation. The aim is to improve photosynthesis through cross-breeding and selection.'

Improving photosynthesis poses a new challenge for plant scientists and plant-breeding companies. So far they focused on the genes within the nucleus of the plant cell, where the most genetic information is stored. Some genes, however, are found in chromosomes in the chloroplasts and mitochondria. Analysing the contribution these genes make to variation in photosynthesis and other processes is not easy.

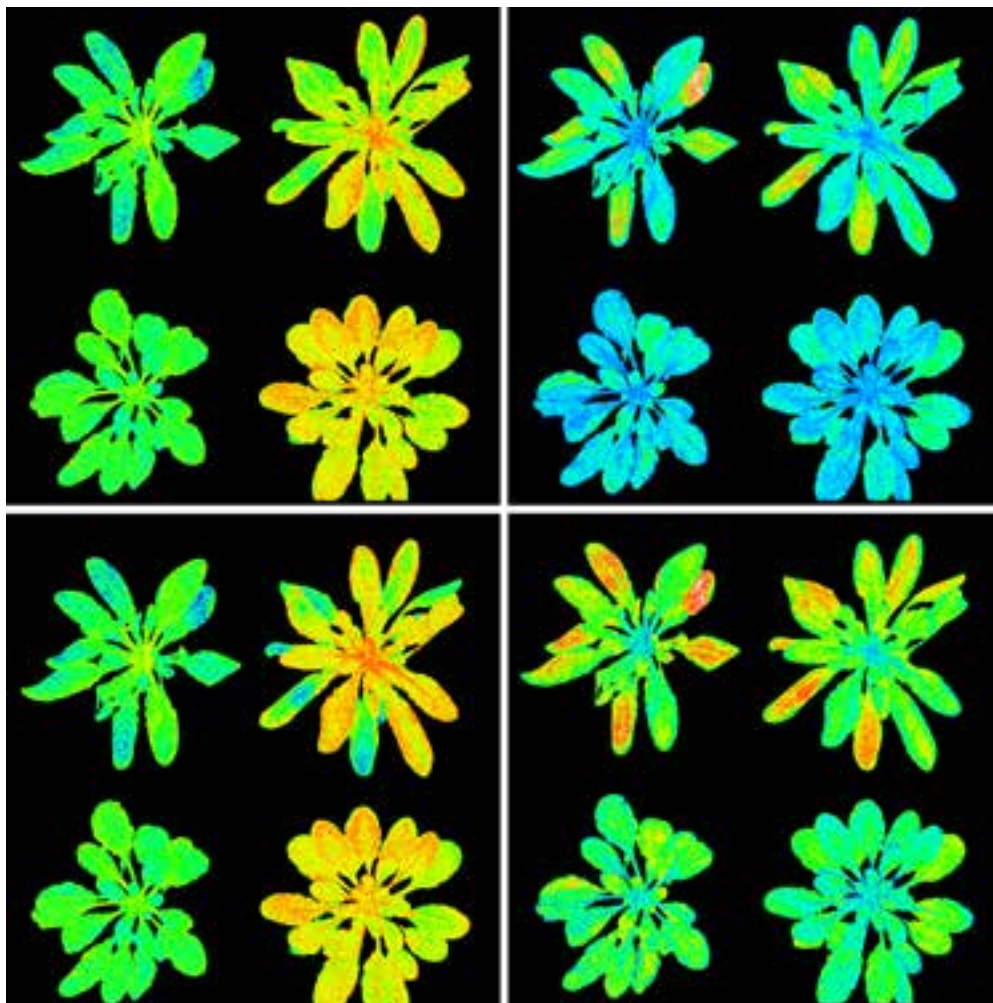
FATHER AND MOTHER PLANT

Last month, however, Wageningen geneticists reported on a new method for more systematically exploring the impact of the chloroplast and mitochondrial genomes on plant variation. For the first time, their method allows the organelles from one plant to be easily replaced by organelles from another. This could prove to be a breakthrough in photosynthesis research.

PhD student Tom Theeuwes and co-author Erik Wijnker from the Laboratory of Genetics did photosynthesis research with *Arabidopsis thaliana* (thale cress). They already knew that *Arabidopsis* showed natural variation in photosynthesis capacity. But then they found a mutant of the thale cress with a genetic defect: during crossbreeding it only passed on the genetic information of the male parent to the offspring. This mutant served them well, because now they could create varieties that automatically contained the DNA from the cell nucleus of the father plant and the organelles of the mother plant. In other words, they could produce genetically identical plants with different photosynthesis engines.


HECK OF A JOB

When the Wageningen geneticists started to measure the photosynthesis capacity of these plants, they indeed found variation in the photosynthesis. 'Our research shows that we can improve the photosynthetic properties of plants,' says Theeuwes. Note, however, that



▲ Analysis of four different photosynthesis traits. The top two plants in each panel have identical cell nuclei, as do the bottom two. The organelles are identical in the two plants on the left and in the two on the right. The greener and bluer the image, the lower the photosynthesis of the plant. This method enables the researchers to attribute photosynthesis traits to the cell nuclei and the chloroplasts.

this research was not done on a food crop either, and it too made use of GM techniques. Moreover, these techniques only work within plant species, in this case *Arabidopsis*. In order to use this strategy on food crops, researchers would need mutants of food crops that only pass on male genetic information. It would be a heck of a job to find these.

But plant breeders have an easier method at their disposal, says Wijnker. They can cross-breed a male and female plant of, for instance, the tomato and then continue breeding with the father plant only. After six to seven generations, the DNA of the offspring is nearly identical to the original male. Plant breeders can use these plants for crossbreeding trials. 

DIES NATALIS

The Executive Board cordially invites you to attend the celebration of the 102nd *Dies Natalis* on Monday 9 March 2020. The theme of the day is Illuminating Science for Transition, with a focus on fundamental research that supports transitions. Donald Ort, professor of Biology at the University of Illinois, will discuss his fundamental research on photosynthesis. Three young Wageningen scientists will present their fundamental research in relation to transitions.

9 March, 15:00, Orion

Goodbye personal desk

Offices around WUR are being refurbished to free up more space and create a more modern workplace. The new concept is called myWURspace, and there is no place in it for a desk of one's own. Rens Buchwaldt (Executive Board) explains the far-reaching change.

text Roelof Kleis *photo* Guy Ackermans

Anyone can see that the campus is crowded. Just walk into a building and you'll see staff huddled close together. The rooms are packed with desks and cupboards. Chair groups have nowhere to put their thesis-writing students. It is not always easy to find somewhere to concentrate and work quietly. And it is not getting any better because WUR is growing apace. Calculations show a need for at least a further 15,000 square metres of 'functionally useful floor surface' – i.e. workspace – in the offices up to 2025. MyWURspace is intended to largely solve this space shortage.

What is the essence of myWURspace?

'The intention of myWURspace is to provide the space to do your work as pleasantly and as well as possible. Space in the physical sense of the word, but also headspace. Work is changing. Collaboration is increasingly important. Collaboration within your own circle, but also between Science Groups. New working methods such as "scrum" and "agile working" require appropriate spaces. Young people who come in here want different office environments. A standard office with four desks in it doesn't work anymore.'

Does that spell the end of a desk of your own?

'Yes. Instead you have the run of the building.

That means you don't work at one desk all the time, but in a larger area of the building. We must find a system in which everyone can choose the kind of work environment they need at any given moment. And that even might be spread over several buildings.'

MyWURspace is being put in force centrally.

Why?

'We are doing that because we think this way of working is important throughout the organization. Of course, myWORKspace will take different forms at different locations. The buildings and the kinds of work staff do are different. But we want to get the broad lines clear as to what we mean and the direction we want to go in. And we haven't come up with that on our own. This has been discussed with the Science Groups. We are trying to steer the process together. Anyway, not every building is suited to myWORKspace. We assume that it is possible in 70 per cent of the offices, though.'

Is refurbishing the buildings enough to gain more than 15,000 square metres of space?

No. The new building plans include two large building projects: a new research building with both laboratories and office space; and a renovation and extension to Radix, both the middle and the eastern part. How much they need to

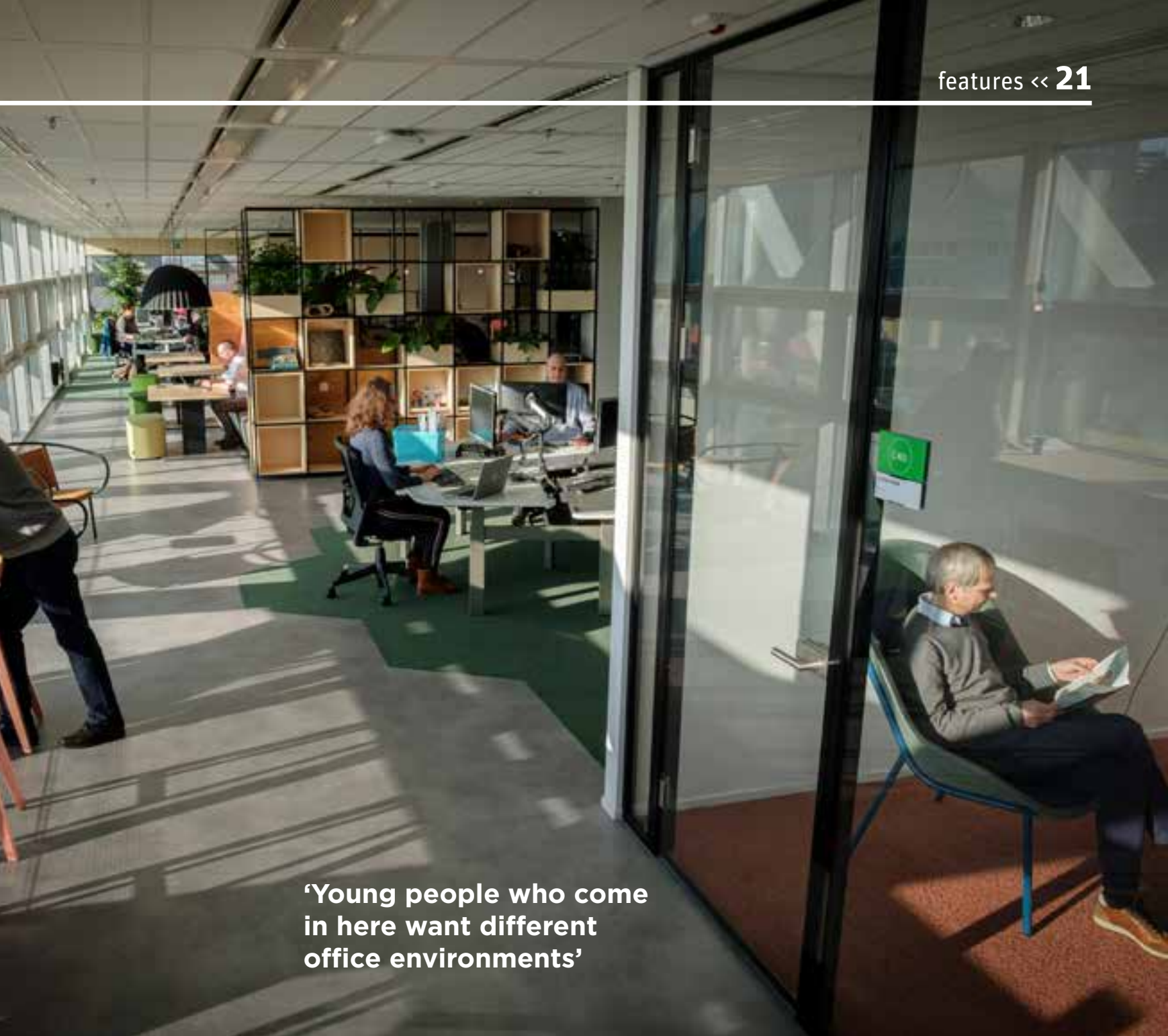
expand depends on the myWURspace solutions. In three or four years' time we shall have an idea how big that extension needs to be.'

Does myWURspace conform to the norm of 8.5 square metres of workspace per fulltime employee?

'That norm is a way of calculating the size of offices needed. But that does not mean that everyone has an office of 8.5 square metres. The point is how you organize the space and create the physical environment that enables people to work comfortably. That is the objective, and not creating a certain number of square metres per person.'



▲ Flexible working on the fourth floor of Atlas.




‘Young people who come in here want different office environments’

Polls show that flexible offices are not popular. People are attached to their own spots. What does myWURspace have to offer those people?

‘At present, flexible offices are just offices with seven desks in them where there should be three. The experience is then that a flexible spot doesn’t work. As a solution to growth, more desks are often crammed into the same space. They are not nice places to work; they are too crowded. Studies show that the desks are in use for an average of 41 per cent of the time. Meeting rooms are used for 22 per cent of the time. So we need to make much smarter use of them. MyWURspace is about how you

work together and how you provide the appropriate space for that.’

How are you going to implement this?

MyWURspace has already been introduced at WEcR (Wageningen Economic Research, ed.) in The Hague and on the fourth floor of Atlas. People like working there. The utilization level and people’s experience of the work environment are positive. That is what we have got to show people, by organizing visits for example. We must make sure people see and hear that this way of working increases people’s job satisfaction, and the effectiveness and impact of the organization. If that succeeds, we’ll all be on the same page.’ 

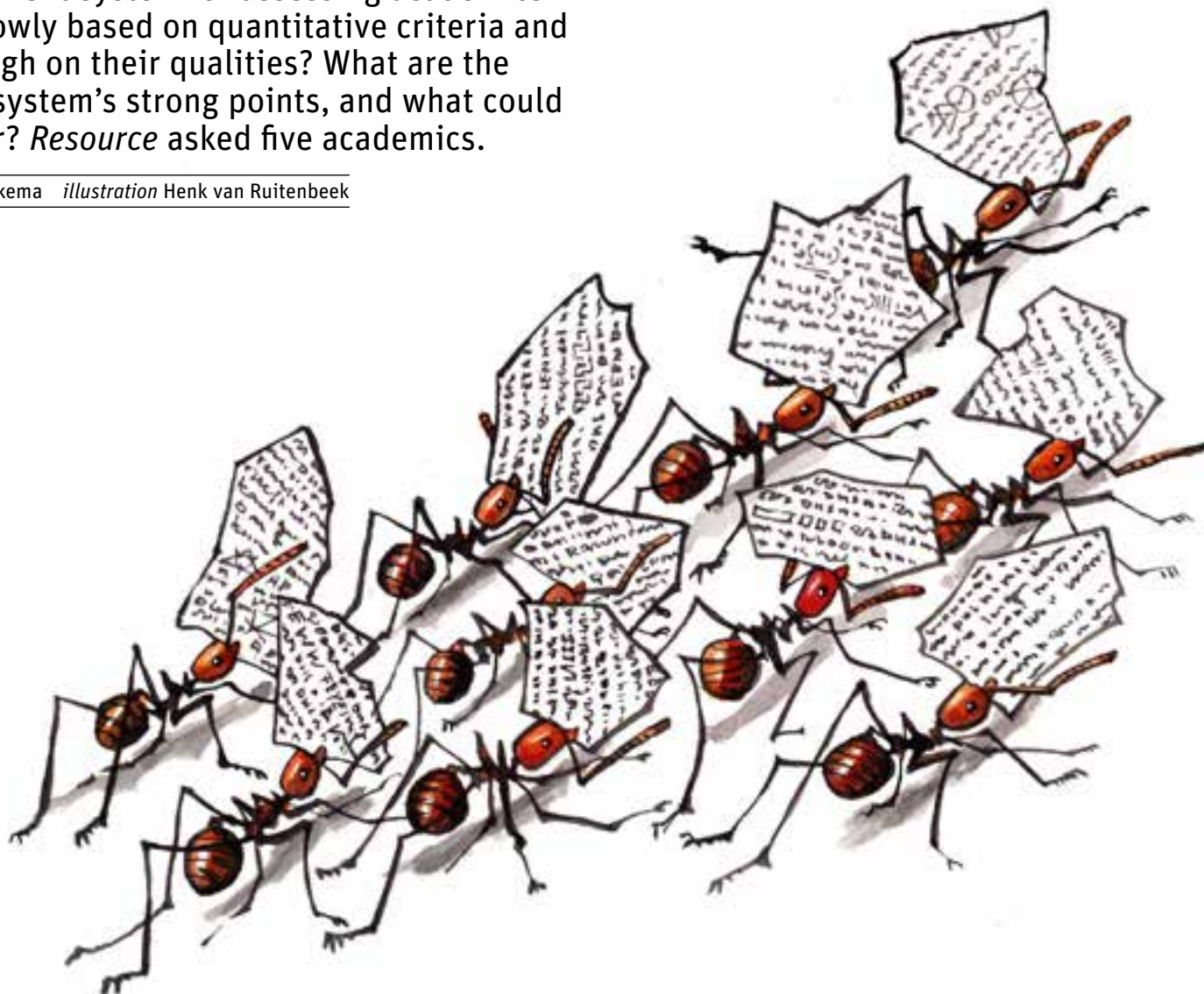
UNUSED DESKS

Although people experience crowded working condition, work stations often go unused. A study last year showed that desks are not used for an average of 56 to 64 per cent of the time, depending where you are in the organization. Meeting rooms are used even less: 22 per cent of the time. Staff work for an average of 68 per cent of the time in the office, 10 per cent in the lab, and over 5 per cent at home, and they spend 11 per cent of their time elsewhere on the campus or in transit.

ASSESS TENURE TRACKERS ON THEIR TOTAL PORTFOLIO

Is the current system for assessing academics too narrowly based on quantitative criteria and not enough on their qualities? What are the present system's strong points, and what could be better? *Resource* asked five academics.

text Albert Sikkema illustration Henk van Ruitenbeek





Jasper Candel



Soon to get his PhD in Soil Geography and Landscape

'After my PhD research I faced the decision: am I going to go on tenure track or go into teaching? I have ambitions in both education and research. But in the tenure track system, quantitative criteria such as the number of publications and PhD students are no longer a means of determining quality but an end in themselves. **When all everyone worries about is collecting credits, they play it safe and you get cautious science it's easy to score with. Education then becomes the poor relation.** That kind of work culture holds no appeal for me. I want to educate competent people. WUR should use tenure track much more broadly and look at the social impact of education and research as well. I think from now on it would be better for tenure trackers to make a plan outlining what they want to achieve, and for a committee to assess the implementation of the plan every three years. That way, not everyone has to go through the same evaluation mill and you can make career policy more diverse.'

Ton Bisseling



Professor of Molecular Biology

'With tenure track, you have to look for a balance between transparent rules and a quality assessment. You don't want to go back to the 1980s, when a lot of new people were appointed, many of whom got stuck in research and just sat out their time. We must give people a challenge: what do you really want and how do you stay happy in your job? The nice thing about tenure track is that it is not the chair-holding professor who decides about that, but that a group of colleagues evaluate it. **The aim is not to excel, I think, but to contribute to the university's strategy.** It is hard to make precise rules, and there's a difference between ground-breaking articles and articles that elaborate further on the topic. And if you attract 15 PhD students a year but no analysts and postdocs, you are not helping to create a healthy chair group and I don't think you deserve to be a personal professor. To assess quality properly, you need good people in the evaluation committee.'

Betina Piqueras-Fizman



Tenure tracker in Marketing and Consumer Behaviour

'I have been on tenure track since I arrived in Wageningen in July 2014 and I am happy. I am now an associate professor. A very strong point is that the requirements and assessment criteria are established in advance, so you know what you're signing up to. **The system is fair and transparent, which combats inbreeding and internal competition.** My biggest fear is that WUR is changing the rules of the game. For example, the requirements for becoming a personal professor were recently raised. This really affects your strategy. I also understand the criticism of the PhD factory.'

Why is the number of PhDs such a hard criteria? But we are also assessed qualitatively on our reputation, the number of keynote speeches we give and committees we are on. Overall I am happy, but the system does put you under a lot of pressure. I'm taking a month and a half's sabbatical next month to learn more about machine learning and catch up on the literature. The irony is that I have to take "time off" to learn and reflect on something new. Tenure track is a non-stop race.'

Kevin Matson



Tenure tracker in Wildlife Ecology and Conservation

'The tenure track assessment criteria at WUR are meant to be challenging, and they are. But they should also be motivating and achievable. Currently, you must score high in all categories, in ways that can feel unrealistic. In some groups you need to supervise 10 PhD students to become a personal professor. That is: consistently 10 PhDs, on average, during the period leading up to promotion. Why have 10 PhDs if that means that you don't have enough time to properly guide them all, given all the other requirements? Having said that, there is some flexibility in the assessments. The assessment committees also look at the quality and quantity of my teaching and my impact. Overall, I think all the elements for a more qualitative assessment are in place in Wageningen, so I hope that WUR will give less attention to the numbers. **Tenure trackers could be judged on their total portfolio including qualitative elements, for example support letters from peers.** Instead of showing an endless list of publications, candidates could highlight the excellence and impact of a subset.'

Wouter Peters



Personal professor in Carbon Cycle and Atmospheric Composition

'My views on tenure track are not always in line with the current negative image it has, but I am in favour of less quantitative criteria. Although I don't think the criteria are as all-important in practice as they are made out to be on paper and in the discussions. Very few antisocial researchers are promoted because they happened to get the required points, and the university rejects very few good researchers who fail to meet the criteria. In my view, tenure track **is a system that has been fairly effective in selecting, promoting and motivating a large and diverse group of talented people.** The big challenge for the future is to establish a system that is still based on clear and honest quality criteria, but that also does justice to a broader perspective on what a good researcher should be capable of. The main point for improvement in the short term is to reduce work and achievement pressure without destroying the selective nature of the system.' ③

Drowning in bills...

...for something you already paid for

Imagine coming home to a pile of bills, fines and letters threatening to confiscate your personal belongings... all for something that you already paid for. It happened to WUR student Yichun Zhou. 'I felt so helpless.'

text Luuk Zegers photo Guy Ackermans

When Zhou was studying for her Bachelor's degree in Horticulture and Agribusiness in Delft, she lived with two roommates in a student house in Delfgauw. 'While I was living there, I received a letter from the municipality which told me to pay two regional taxes: for waste and for wastewater purification. This amounted to more than 400 euros per year. Because this was not mentioned in our contract, we decided to check with our landlord whether we should pay. He told us not to worry about it and that he would take care of it. We were relieved.'

However, when Zhou and her roommates had three months left on their contract, their landlord sent them a message, asking them to pay some bills. 'We were confused, because all of a sudden he asked us to pay for those same taxes he had earlier said *he* would pay. But at that time, the three of us were very busy with internships and writing theses to finish our Bachelor's degrees. And we trusted our landlord, so we just paid. To get it over with.'

FRESH START

After her graduation in Delft, Zhou moved to Wageningen for her Master's in Health, Com-

munication and Life Sciences. 'Ready for a fresh start. But quite soon, letters started pouring in. When I opened them, I could see they were bills. Because they were all written in Dutch, I could not really understand what they said. So I asked my Dutch roommates.'

Zhou's roommates explained that the letters were bills and reminders to pay the local taxes for her student house in Delfgauw. 'I could not believe it: my former roommates and I had already paid those taxes to our landlord—taxes that weren't ours to pay in the first place. But the letters just kept coming and after a while, they became very threatening. Each letter told me to pay up immediately, because otherwise the amount would increase. And I could not reach my landlord.'

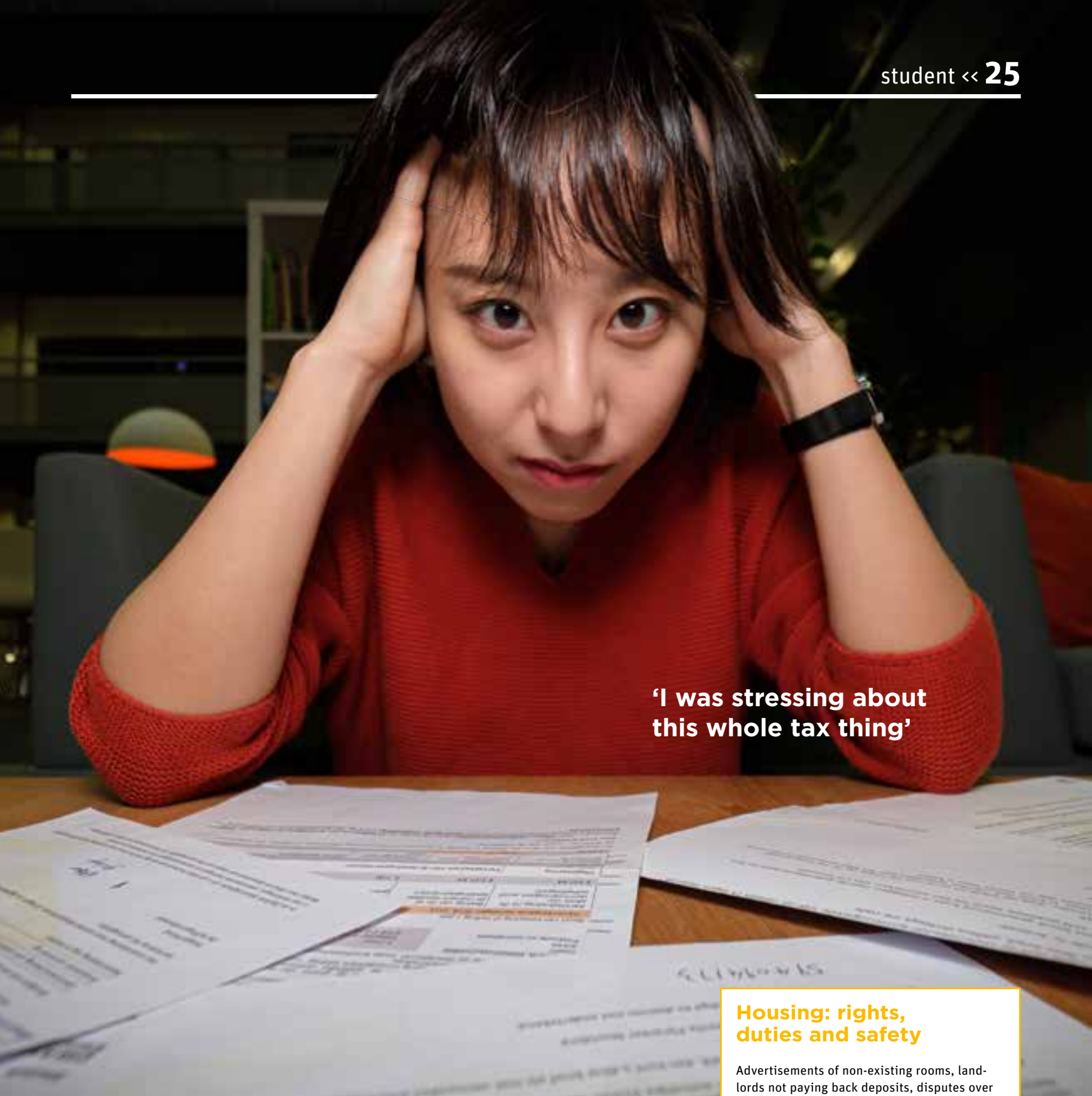
Her Dijkgraaf roommates advised her to pay as soon as possible. 'But it felt wrong to pay twice for something that we should not even have paid for in the first place.' Zhou dialled the phone number on the letters. 'I wanted to fight back.'

The person on the other end of the line told Zhou it was not his responsibility and redirected her to someone else. Who redirected her to someone else, who... etc. etc. 'After being kicked around like a football for an hour, I finally spoke

to a person who said he would help me. But when I sent him my documents and the proof that we paid it to our landlord, he told me that he could not help me and that I should just pay.' Meanwhile, Zhou had joined WUR's Student Council. 'We worked long hours, learning the job on the go. But when I came home after a long and busy day, I could not relax, because I had to stress about solving this whole tax thing. With every letter I received, the amount we had to pay increased. My Delfgauw roommates thought it was unfair to expect me to fight back. But I was listed as first tenant on the contract, so I was the one who received all the threatening letters. Which meant that I was the one who had to fight back. I wanted to, but the municipality of Delfgauw was not supportive at all. I felt so helpless, so alone.'

HELP

In November 2019, the threatening tone of the letters increased. 'It started with a "writ of execution (*dwangbevel*) in the name of the king" and the letter said that if I did not pay within two days, they were allowed to confiscate my salary or my belongings.' Exhausted and depressed from what felt like a fight she was dragged into against her will, Zhou asked



'I was stressing about this whole tax thing'

Housing: rights, duties and safety

Advertisements of non-existing rooms, landlords not paying back deposits, disputes over who should pay for what, contract issues... There are quite a few pitfalls when it comes to renting a room and it is not always clear what rights you have as a tenant. So Student Council party Sustainability & Internationalization (S&I) will host an event to clarify the rights and duties of tenants, safety regulations, where to go for help and other housing-related issues. 'Housing! Rights, Duties and Safety' (in collaboration with Wageningen municipality, Student Alliance and HousingDesk) will take place on Thursday 20 February 12:30–14:00, in Speakers Corner in Impulse.

HousingDesk Wageningen for help. 'I explained what happened and showed them all the letters. Together, we tried calling my landlord again, but he did not pick up and did not reply to the voicemail. In the end, we decided together that it was best to pay: the whole thing had escalated way too far to solve it any other way. But they listened to my story and tried to help me. That alone made me feel so much better.'

On 9 December, Zhou transferred the money to the debt collection agency. Her former roommates shared the costs. 'The lesson I learned is: don't just pay every bill your landlord sends you. And if something bad happens to you, you have to act immediately. If you cannot figure it out on your own, ask for help. But take an active position, because if you wait, things will only get worse.' 📢

IN OTHER NEWS

WEIGHTY (1)

Birch trees with weights hanging from their branches grow thicker, sturdier trunks than specimens without that added weight to bear, discovered researchers at the University of Helsinki. This 'awareness' the tree has of its own weight can be traced back to a single gene. Without that gene, the growing tree ends up snapping in two.

WEIGHTY (2)

It is not clear how birch trees notice the extra weight. And extra growth in the trunk requires motion. Immobile birches do not respond. Birches grow fast. No research has been done yet to find out whether other trees can do the same trick. The discovery does reveal a simple way of increasing CO₂ storage though: just hang weights on trees.

HOT OR COLD

Mosquitoes locate us by sensing our body heat. Well, that theory can go out of the window, shows a study by Brandeis University in the US. It works the other way round: mosquitoes detect the cold as they get further away from their prey. The colder it gets, the more active a protein (IR21a) becomes that helps send directions to the mosquito's brain. It makes no difference to the result though: you get bitten.

WASH YOUR HANDS!

Pathogens like the coronavirus do not spread as fast if travellers at airports wash their hands better. Epidemiologists at MIT estimate that only 20 per cent of all travellers have clean hands. Triple that percentage and the pathogen spreads 70 per cent more slowly. If that happened at the 10 main airports near an infection source, the effect would still be half that. You must use soap, though!

Coronavirus-related bigotry shocks Chinese students

Last weekend, the Bornsesteeg student flats were daubed with hateful texts such as 'Die, Chinese' and 'Chinese Corona'. Chinese students were shocked by the incident. They see increasing discrimination of Chinese people since the outbreak of the coronavirus.

In the evening of Saturday 8 February, Bornsesteeg, which has a relatively large number of Chinese students, was attacked by vandals who smeared the lifts with faeces, tore up a poster of the Chinese flag and left behind hateful texts. Residents have reported the incident to the police.

'A group of young people were running around shouting and laughing, knocking on the windows of student rooms,' says Student Council member Yi-chun Zhou. 'It was dark outside, so they can see you but you can't see them. This makes you feel unsafe; it is intimidating.'

The incident in Bornsesteeg has caused a stir, as is clear from the multiple posts on the subject in Facebook group Wageningen Student Plaza. People commented on Twitter too.

WUR Executive Board President Louise Fresco and rector magnificus Arthur Mol expressed their support for the Chinese student community in Wageningen and denounced the xenophobia and racism.

MORE DISCRIMINATION

But besides statements of support, there were also negative reactions. Earlier, a cartoon of a Chinese flag was posted in the Student Plaza group in which the stars were replaced by images of the coronavirus, accompanied by a call to avoid all contact with Chinese people. 'Peo-



PHOTO: SHUTTERSTOCK.COM

ple have freedom of speech,' Zhou says. 'It is their right to make whatever jokes they like. But jokes are meant to be funny. If a joke is hurting people, it is not funny anymore.'

Ziying Huang is chair of the Chinese student association Cassw. 'Since the outbreak of the coronavirus, we see discrimination

'We are worried about friends and family in China. It is no joke to us'

against Chinese people increasing. Students are being called "Corona", for example. Maybe people just want to make a joke, but it is not a joke to us. You have to realize that we are worried about friends and family back home in China, and now we also have to deal with discrimination and racist jokes here. That makes it difficult.'

TOLERANCE AND RESPECT

The mayor of Wageningen Geert van Rumund, Idealis director Bart van As and WUR rector Arthur Mol have expressed their

disgust at the incident in Bornsesteeg in a joint statement. 'These actions do not reflect the Wageningen culture of tolerance and intercultural respect. There is no room for hateful and discriminatory behaviour in Wageningen, where 110 nationalities live and work together in a peaceful and tolerant manner.' The university is keeping in close contact with Cassw. Both Zhou and Huang are happy with the swift response from the university and the municipality. However, Zhou does think that Idealis should work on the safety of its student complexes. 'At present, anyone can just enter the building and wander down the corridors.' On Facebook too, people are calling for camera surveillance or a pass system, which would prevent unwelcome visitors from entering the buildings. However, it is unlikely that cameras will be installed any time soon: a survey in 2019 showed that most residents do not want camera surveillance. **® LZ**

GLOBUS festival is taking shape

The sustainability festival GLOBUS, planned for Saturday 13 June on campus, has now secured the minimum funding it needs to go ahead. The social dimension is also being fleshed out.

‘Linking sustainability to a broad community approach is important to us,’ explains Environmental Sciences Master’s student Hanna van den Heuvel, one of the organizers. ‘We are investigating whether we can use refugees as volunteers in return for references. We are also in



contact with Pantarijn secondary school so we can involve youngsters in the festival. And people with intellectual disabilities are helping produce the decor for the festival.’ GLOBUS is aiming for as green an organization as possible, plus inspiration and revenue, continues Van den Heuvel. ‘GLOBUS will use green energy, we will have eco-toilets where the waste is converted into fertilizer, and the festival tokens will be made of plastic from the ocean. In addition to music, the festival will also feature a rubbish collecting event, with a trash artist using that litter to build an artwork. We want to make sustainability something tangible.’ GLOBUS hopes to use the proceeds to buy 15 hectares of tropical rainforest in Costa Rica. ‘We will do that in partnership with the local Work With Nature foundation. One of our organizers visited them to check they were legitimate, so that we know for sure where our money is going.’ GLOBUS is now definitely going ahead and advance ticket sales have already started. ‘At the



moment we are focusing on the programme and promoting the festival. Performers’ diaries soon fill up so it’s important to start booking them now. We have actually already engaged some of the performers but I can’t reveal anything because of our PR plan.’ **RD**

MEANWHILE IN... CANADA

‘The whole country was in a state of mourning’

After rising tensions between the USA and Iran, commercial flight PS752 was mistaken for a rocket and shot down by an Iranian defensive missile on 8 January. All 176 passengers on the flight died instantly. Of the victims, 57 were Canadian citizens and another 29 were permanent residents of the country. Kirby Frank (30), a Master’s student of Biotechnology from Canada, experienced the aftershocks first-hand.

‘I remember seeing the news about the plane crash on social media around 3pm ET and by that evening it was being covered by every single news outlet. All the news channels were flooded with interviews with family members, experts and government officials. The fact that almost all the Canadian passengers on that flight were coming back to Canada after visiting family hits really close to home. I was essentially doing the same thing at that time. The number of scientists and students on that flight is also shocking. Many of the victims were researchers or students linked to about 20 Canadian universities



Kirby Frank (30), a Master’s student of Biotechnology from Canada, shares his feelings and perspective on the plane crash of flight PS752 on 8 January.

The whole country was in a state of mourning, especially Ontario, where most of the



PHOTO: VIDEO131 / SHUTTERSTOCK.COM

victims lived. It was a tragedy, but the plane crash also brought out a beautiful unity in our country. Vigils were held across Canada. And still today, all Canadians are mourning this senseless loss of life. These events serve as a reminder that in today’s globalized society, conflict doesn’t have to be geographically close to be felt deeply. Initially, the Iranian government demanded that family members fly to Iran to claim the bodies of their loved ones. This was not only expensive, but almost impossible since the airspace was closed at that point. The thought of having to go through all that after a great loss is infuriating. Fortunately, the issue was solved and the victims’ remains have now been arriving in Canada one by one. The Canadian government will also make 25,000 Canadian dollars (17,250 euros) per victim available to families to assist with related costs.’ **IC**

YOU ON CAMPUS

The resits period of the past two weeks meant the library was very busy. Luc Roefs (26), a BSc student of Business and Consumer Studies, had to get down to work, too. With one last resit, he is hoping to round off his BSc degree, which has taken six years. 'I've actually done something every year that was more interesting than studying.'

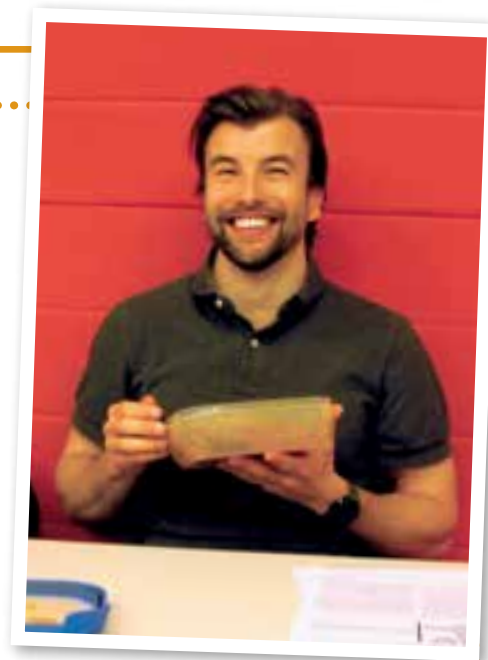
You need more than two hands to count Luc's extracurricular activities. They range from running a marathon to filming a marriage proposal in a helicopter. 'Your university days are the ideal time for doing things you really want to do. You can't do that if you complete your Bachelor's in three years. So I may have taken longer, but I've done things that might not be possible later on.'

Luc's organization talent has been particularly productive. As a member of Ceres, he was

one of those behind the launch of Ceres International, and as a keen sportsperson he helped found the squash club Ballistic. 'That didn't exist when I started here. In my second year I asked why not and they said, "Just start one!" So I did, together with two other people, and now the club has about 40 members.'

'They said, "Just start a squash club." So I did'

Now Luc is working on launching his next society: the Vegan Student Association (VSA) Wageningen. 'The first VSA was started just over a year ago in Groningen. The national meeting of all the Dutch VSAs made me really enthusiastic, and I set to work, with two other



people. We now have four more members and we are all trying to get people interested and attract attention. We are present at lots of activities during the WinterAID, for instance, and we'll soon be going to Veggie-World, the biggest plant-based fair in the Netherlands. We are also planning to hold drinks parties, workshops and talks. I hereby urge anyone with any interest in a plant-based diet to come along to one of our events ([facebook.com/vsawageningen](https://www.facebook.com/vsawageningen)). And meat-eaters are most welcome too, by the way! **HB**

'Oh sorry, my girlfriend and I lost all track of time'

DIARY OF A CARETAKER

Eugene van Meteren works for Idealis as a caretaker. He writes about his experiences for *Resource*. You can read all his columns on [resource-online.nl](https://www.resource-online.nl).

At 52, Eugene van Meteren has seen a bit of the world and of love. But he was a bit taken aback by a full-frontal confrontation with a tenant's love life at the Dijkgraaf.

Idealis has a rule that keys must be handed in by 12:00 on the last day of a tenancy agreement. Every now and then, someone's late – like that memorable tenant at the Dijkgraaf residence. After 12, I decided to take a look. I knocked several times and called out loudly to ask if there was anyone in: no answer. Then I saw that the door was ajar, so I went into the room. What met my eyes was a couple, stark naked and wrapped around each other in a position I had

never seen before. 'What are you doing here?' asked the young man. Covered in confusion at the situation I found myself in, I began to stammer nervously, 'Errr... key... 12 o'clock... return... Idealis.' I was like Mr Bean. 'What do you mean?' I pulled myself together and said the keys should have been handed in by 12 noon.

He stood there stark naked, talking to me without a trace of embarrassment as if it was the most normal thing in the world.

The couple made no attempt to cover themselves up but stayed as naked as the day they were born. 'Oh sorry, my girlfriend and I lost all track of time. If you can just give us an hour, we'll drop off the keys at your office then.'

'He stood there stark naked, talking to me without a trace of embarrassment'

As I closed the door behind me, I realized I knew the couple. They met when they started the same degree programme in Wageningen. Whenever I saw them together they were walking hand in hand, looking madly in love.

With a healthy flush on their faces, the young couple handed in the key an hour later, as agreed. They tell me they are going back to his home town to live together there. I wish them luck and reflect on what a great thing it is, how university brings people together. And now, on they go to a great future together. **B**



Wageningen Master's students do internships and thesis research all around the world. Here they talk about their adventures – with special attention in this Valentine's edition for long-distance love.

'No one here has a nine-to-five mentality'

I've always been interested in other cultures. Because I had already done a few international projects before I went to South America, I was already fluent in Spanish. It is important to me to be able to communicate with local people when I go somewhere to work or study.

CONTAMINATED COCOA

For my field research in Ecuador, I worked closely with people from the Coca area in the middle of the Amazon. I could do research there on an experimental cocoa plantation to improve our understanding of the production, soil quality and plant-soil interactions in agroforestry systems in cocoa farming. High levels of cadmium in cocoa beans are the main problem at the moment. This is because many places in South America are cadmium hot-spots, and stricter European regulations about permissible levels of cadmium in chocolate are leaving a lot of small farmers with a surplus of contaminated cocoa beans.

COUNTING INSECTS

Much of my fieldwork was demarcating sections of soil of 25 by 25 centimetres and counting and identifying all the insects and other macrofauna in them. A massive task, and not always very motivating for myself or the locals who helped me. But they stayed positive and we worked hard together. That was one of the things that struck me the most: how hard people work here, and how little they are paid. No one has a nine-to-five mentality. That fills me with respect.

ENORMOUS BIODIVERSITY

Besides Coca, I also went to Guayaquil, where the laboratory is where I could process my samples. I wrote my report at CIAT (International Center for Tropical Agriculture), an hour's drive from Cali (Colombia). At the weekend I often went hiking in the mountains with the

owners of the house where I lived in Cali. We didn't walk on footpaths but cut a trail through the wilderness with a machete. What with the many microclimates we walked through, it often felt like we were explorers on an expedition. The nature here is beautiful and I really got to see it because I went to so many different places. The Andes, the Amazon and the coast all have their own climate and culture. The enormous biodiversity, the tropical heat and the landscape that is so different to the Netherlands are things I will never forget.

LONG-DISTANCE LOVE

I have an Italian boyfriend who is doing a PhD in Italy. It is not always easy to figure out where and when we can see each other. Luckily he had two weeks holiday at Christmas and came to see me, but before that we hadn't seen each other for three months. During the two-week Christmas holiday we travelled on the Caribbean coast together and camped in the wild on white sandy beaches. A long-distance relationship is not always easy but it is worth it for the moments you have together.' **EM**



THE WORKS

Who? Anna Maria Visscher (26), MSc student of Plant Sciences and International Land and Water Management
What? Thesis at the International Center for Tropical Agriculture (CIAT) & Escuela Superior Politécnica del Litoral (ESPOL)
Where? Ecuador and Colombia

Do you too have a nice story about your internship or thesis research abroad?

Email resource@wur.nl



Announcements

Student Council 2020/2021 election – schedule

The Student Council 2020/2021 election will be held from Monday 25 May 2020, 00:00 hrs to Thursday 28 May 2020, 23:59. The complete time schedule for the Student Council election can be consulted via the Student Council election Team Site and MyPortal. A copy of the decision of the Student Council will be available for inspection at the office of the Secretary of the Student Council. Any person concerned may lodge a notice of objection to this decision up to and including 20 February 2020, with the Secretary of the Student Council, Hermijn Speelman, Droevendaalsesteeg 4 (Room B.103), PO Box 9101, 6700 HB Wageningen.

Arduino course for beginners at Fab-Lab Wageningen

On this course you'll learn about microcontrollers (Arduino), electron-

ics, and the programming language for making robots and control self-driving machines, advanced measuring apparatus or even 3D printers. Eight Tuesday evenings from 22 February. Email: info@fablabwag.nl

National Youth Council: Become our new youth representative

Would you like to make the voice of Dutch youth heard in various international conferences about food and biodiversity in Japan, Rome and China? 2021 is a crucial year for biodiversity. Negotiations are currently under way about a new global agreement on biodiversity, with goals for the coming decades for all countries. In 2021 Rome will form the backdrop for a large Food Systems Summit in which the Netherlands will play an active role. As a youth representative, you are the link between youth and policy-makers. You go in search of the opinions and ideas of lots of different young people and discuss them

with key figures at all kinds of conferences. Fantastic for your personal development and a perfect opportunity to put your skills into practice!

www.njr.nl/jvb10

NIBI: Biology Week

The Dutch Institute for Biology NIBI is running the fourth Biology Week this year, and is looking for ideas for things to do. From Monday 25 May to Monday 1 June, we shall set out to show how fascinating and important biology is – both in the wild and on farms and at institutions. Show how farmers and nature can go together. Take your audience with you into a natural environment or demonstrate the newest technological developments in the lab. Send in your ideas through www.weekvandebiologie.nl

Applications are open for Mingler Scholarship

The Mingler Scholarship is for artists and scientists who want to carry out a research project together. The

idea behind the scholarship is to stimulate interaction and synergies between scientific and artistic research. It aims at making the sharing of knowledge and skills between professionals easier, more adventurous and richer. The Mingler network is an initiative from the Academy of the Arts and the Young Academy, both part of the Royal Dutch Academy of Sciences. It was developed in order to give new arts-sciences collaborations (within and outside the Mingler network) some initial funding. Applications up until 1 March 2020.

AKADEMIEVANKUNSTEN.NL/NL/NIEUWS/MINGLER-SCHOLARSHIP

Agenda

Thursday 13 to 27 February

FILMHUIS MOVIE W

Aquarela: International documentary about water's many personalities as the bringer of life and death, joy

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

Employees Language courses

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

Our new round of courses is starting!



Register now!

Dutch

Basic Dutch 1 & 2
Intermediate Dutch 1

Start Monday 2 March

English

Grammar & Vocabulary (2 levels)
(Advanced) Speaking Skills
Basic & Hospitality English
Professional Skills in English

Start Monday 2 March

'Successful academics speak their languages'

www.wur.eu/into

Science Cafe Wageningen

www.sciencecafe.wageningen.nl

Music by: Wolke



Transition to a Sustainable Wellbeing-Economy

Thursday, 20th Feb
Café Loburg
19:45: Live music
20:15: Science
FREE ENTRANCE

Speakers:
Dr. Rutger Hoekstra (Leiden University)
Dr. Caroline van Leenders (RVO)





and despair. *Out Stealing Horses*: Norwegian drama about how you can never escape the past. *The Two Popes*: American drama about dramatic power transitions within the Catholic church. *The Invisible Life of Euridice Gusmao*: Brazilian drama about the indestructible bond between sisters and their quest for happiness. Location: Wilhelminaweg 3A, Wageningen. €6.50/€8.50. movie.nl

Tuesday 18 February, 20:00
CAMILLE FROM THE SERIES:
'MOVIES THAT MATTER ON TOUR',
IN COLLABORATION WITH
AMNESTY INTERNATIONAL
WAGENINGEN

A powerful biography of the French photographer Camille Lepage, who travelled through the Central African Republic to record the civil war. Realistic scenes reveal the complexity of the conflict, while the film shows the capacity of human beings to meet even the most appalling sit-

uations with dignity. After the film there will be an opportunity for discussion.

MOVIE.WL

Wednesday 19 February,
20:30-23:00
CINESCENCE MOVIE TALK:
'UNDER THE SURFACE'
(INTRODUCTION & FILM IN
DUTCH)

Martijn van Staveren lifts the veil on an area of political decision-making – or more accurately: indecisiveness. This Dutch documentary from 2015 reconstructs the extraordinary political and sentiment-drenched decision-making process about whether to flood the Hedwige polder in the province of Zeeland. At CineScience talks, WUR researchers share a unique perspective on the scientific work by linking it in a creative fashion with a film or documentary of their choice. Location: Heerenstraat Theater. Cost: €12.50, students €10.00.

Thursday 20 February, 12:30-14:00
HOUSING! RIGHTS, DUTIES AND
SAFETY

Wondering why you get so many tax bills? Suffering from conflict with your landlord? Worrying about the safety problem in your new living place? Bring your lunchbox and join us in Speakers Corner at Impulse, (building number 115). The Student Council Party/Sustainability & Internationalization will introduce this event. Wageningen Municipality will talk about housing safety, Student Alliance Wageningen will elaborate on exemptions from water and waste taxes and demonstrate how to check the price, and HousingDesk Wageningen will conclude the lunch session by giving tips about rental issues.

Colophon

Resource is the independent medium for students and staff at Wageningen University & Research. *Resource* reports and interprets the news and gives the background. New articles are posted daily on resource-online.nl. The magazine is published every fortnight on Thursday.

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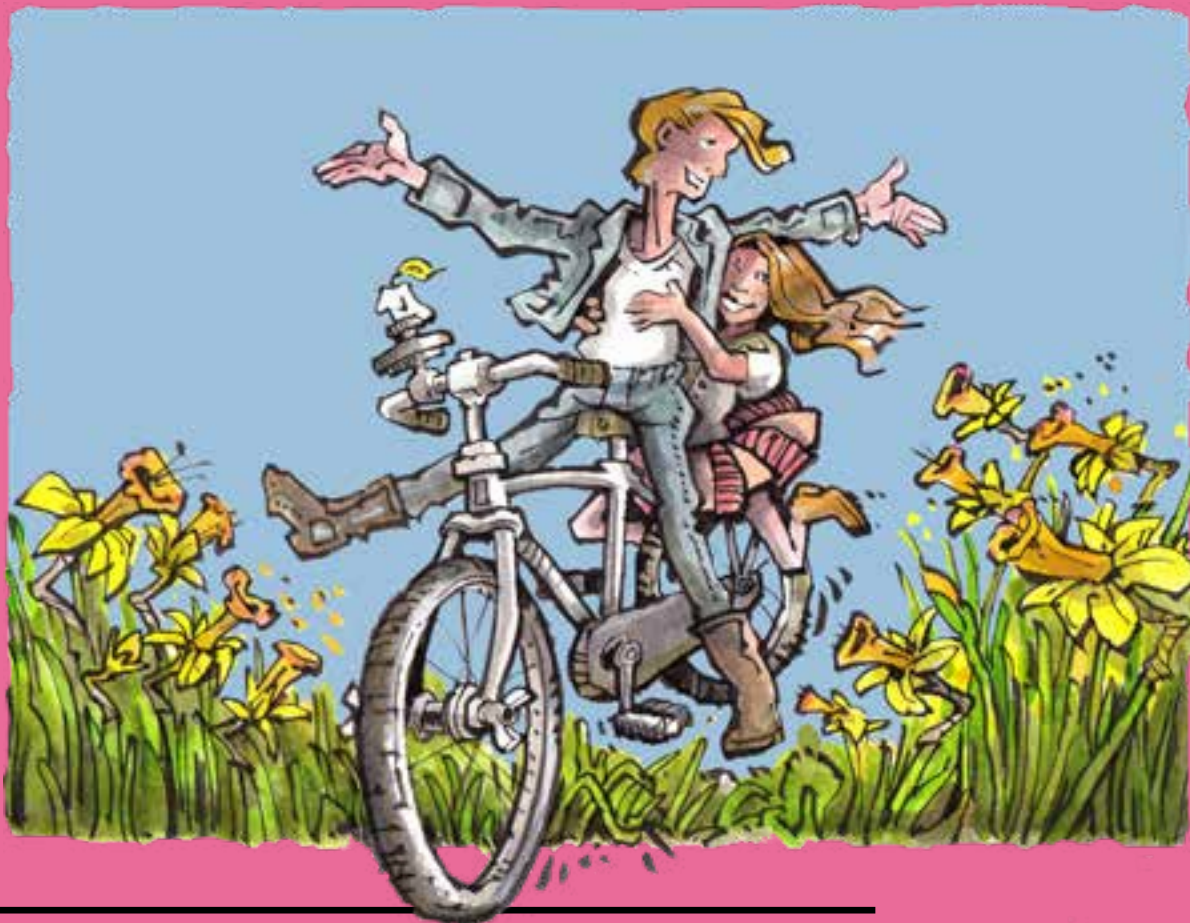
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RESOURCE
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>>TYPICAL DUTCH



A tall guy and his big bike

Breaking the stereotype of Dutch guys not being very romantic*, this guy I have been dating puts so much effort into planning our dates – from the typical movie nights or bowling to preparing amazing dinners.

What stood out was the time when he decided to take me to a science festival to watch a documentary – thanks to my thesis life, for I kept whining about my experiments. The point to be noted is his non-science background and his thoughtfulness in taking my interests into consideration. And now comes the cutest bit. The movie is over and we decide to go home, a 20-minute bike ride away. Here I am, five-foot-two tiny me, sitting behind this six-foot-four guy on his really big bike. You wouldn't think there was anyone sitting behind him had you seen him from the front. And then, tada... the next morning I was greeted with the good old toast with butter and *hagelslag*.

*Yes, they aren't vocally expressive. And yes, say goodbye to spontaneous plans – planning a week ahead is a must. 📍 The contributor of this issue's Typical Dutch kindly requested *Resource* to keep her name anonymous, 'for my own weird reasons'. We have agreed just this once – after all, isn't mystery love what Valentine's Day is all about?

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 25 euros and Dutch candy.

'Had you seen him from the front, you wouldn't think there was anyone sitting behind him'