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# RESOURCE [EN]

For everyone at Wageningen University & Research

no 2 – 31 August 2017 – 12th Volume



## Ready for take-off

p.22

**INTERNATIONAL  
EDITION**

## THE FACE OF THE STUDENT DESK

For 35 years, Marion Rodenburg sat at the university's student desk. Now she has to retire. Many a student, current and former, remembers her helpfulness and humour. And many a professor, including rector Arthur Mol, once registered for exams with her. The students of today look different, says Rodenburg, but they still don't read. 'They can find all the information online but they often still drop by at the desk.' But she will miss them, and she doesn't like the idea. She would rather have gone on working a bit longer.

AS, photo: Guy Ackermans



Read the whole interview  
on [resource-online.nl](http://resource-online.nl)

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## PLATFORM

The new academic year has hardly begun and already there is a controversy in the air. Several professors and other staff members have voiced their objections to the planned keynote speech by author Matt Ridley at the Opening of the Academic Year. The Brit has been invited to speak about positivity in science. He is a man who thinks in solutions and believes that humanity is capable of solving immense problems in ways that no one has dreamt of yet. So he is not pessimistic about the global climate problem either. And there’s the rub, suggests a letter to the Executive Board. The writers of the letter feel that by hosting Ridley, WUR will be associated with his standpoints. I’m not so sure. It is to an institution’s credit that it gives non-conformist thinkers a platform. Another point is that the protesters want a chance to enter into discussion with the speaker. That hits home. Exchange of opinion always leads to something better in the end. I would go so far as to describe that process as a positive thing.

Edwin van Laar



>> [Chasing wildebeest in your Land Rover | p.29](#)

# MANY FIRST-YEARS STILL WITHOUT A ROOM

Nearly 40 percent of the Dutch first-year students in Wageningen still didn't have a room during the AID. For international newcomers the proportion was 10 percent, showed a survey among 300 first-years.

Resource asked the first-years about their housing situation during the Information Market on the last day of the Annual Introduction Days (AID). Of the 300 students who filled in the questionnaire, 193 came from the Netherlands and 107 from abroad. Of the Dutch students, 87 percent were planning to move to Wageningen, and 62 percent of this group had already found a room, whether temporarily or for the long term (see figure). The majority of the students without a room were commuting from their parental home.

Of the international students, 85 percent already had a room of their own and 5 percent were sharing one. Ten percent still didn't have a room at all. And that is unusual because, although the university offers this group no cast-iron guarantees, they do get priority.

Although the Resource survey is not representative, the figures confirm the impression that there is an increasing room shortage. The Housing Desk Wageningen, which helps students rent rooms on the private market, sees this too. 'Landlords offering a room on our website get 80 responses within a few hours,' says Suzanna van der Meer of the Housing Desk.

Student housing provider Idealis notices an increasing shortage of rooms too. 'We've got fewer people vacating rooms this year than in previous years,' says spokesperson Marisca Wind. 'And our plans for temporary accommodation on Kortenoord have been delayed for reasons beyond our control. These two factors have led to us having fewer rooms available for new students.' As a result, vacated rooms are mainly going to international students at the moment, and hardly any Dutch students can get an Idealis room.

A strikingly high percentage of Dutch students want rooms in Wageningen, according to this survey: 87 percent. Idealis assumes that 70 percent want rooms, based on the six-monthly analysis of the residential addresses of Wageningen students and the estimate of the demand for housing by ABF Research. The housing provider thinks the 87 percent that came out of the Resource survey is an overestimate.

Nevertheless, Wind agrees that there are not enough rooms in Wageningen. 'We really do need additional student accommodation, whether

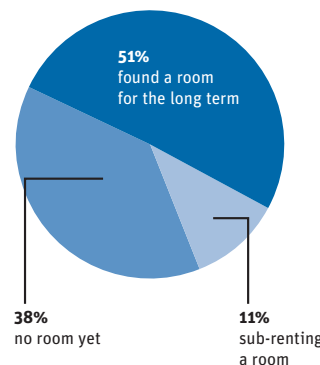


PHOTO: GUY ACKERMANS

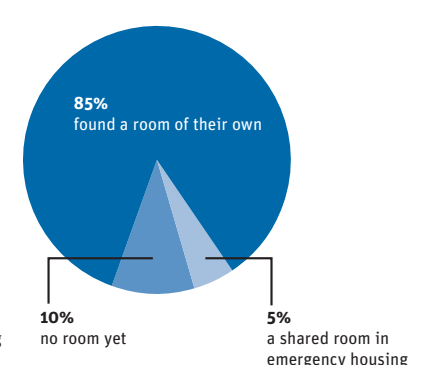
Emergency housing for international students at the former military barracks in Ede.

in new or refurbished buildings.' The university, too, wants to see an action plan. 'Housing is a basic requirement to be able to study properly,' says Ingrid Hijman, head of the WUR Student Service Centre. **AS**

Dutch students looking for a room in Wageningen (169)



International students (107)



## SMALL DOUBLE ROOM

**Dewy Verhoeven**, a Master's student of Environmental Sciences, comes from Landgraaf. 'Altogether, I would be travelling for seven hours a day,



which is not doable. I am looking for an apartment together with my girlfriend. For the time being we've found a small room through the grapevine, to rent temporarily. Not ideal but it will do for a few weeks.'

## A LANDLADY

**Lianne Bijnagte**, a Bachelor's student of Nutrition & Health, comes from Tiel. That is not far from Wageningen but the public transport connection is poor.



'Luckily I can live in my landlady's attic for a while. I searched hard for a room and I am still looking. Because I have to get out of this room in December. Then they want to renovate or something.'

## CYCLING TO HETEREN

**Marthe Lamain**, a Bachelor's student of Biology, registered with Idealis back in January. 'But I'm still low down on the waiting list. Then the parents of a friend of mine bought a small apartment in



which we were going to live together. Only we found out on holiday that we are not so compatible. Now I've got a room in Heteren. That means I have to cycle up and down, but I don't mind that. I come from Friesland, where you always have to cycle long distances.'

## GROWTH OF THREE PERCENT EXPECTED

**Wageningen University is expected to welcome 1630 to 1645 first-year Bachelor's students this academic year, two to three percent more than last year. The number of Master's students is unlikely to increase this year.**

Figures from Education & Student Affairs (ESA) show that the growth in the number of students starting a Bachelor's degree is much less than the 8.6 percent seen last year, but comparable to the increase in the preceding two years.

As of September 2017, WUR has three Bachelor's programmes with an enrolment limit: Nutrition and Health, Biotechnology and Molecular Life Sciences. These programmes limit the num-

ber of students to 160, 120 and 100 respectively. Based on the latest data, 160 first-years are expected to register for Nutrition and Health, 108 for Biotechnology and 82 for Molecular Life Sciences.

No increase is expected this academic year in the number of Master's students compared with last year. But a note of caution should be sounded as this growth is much more difficult to predict. International Master's students and graduates from Dutch universities of applied sciences register later than Bachelor's students. Moreover, students from outside the EU have to go through an entire application procedure before they are definite. They also have to pay first before they can be registered. **📍 LvdN and AS**

## © COLUMN | STIJN

### Regret

The idea is: a big party, especially for me. Some people compare it with a wedding: you are marrying science. I hear on the grapevine that my ex-colleagues have been working for some time to make my PhD celebration a great day. That is nice of them. Very nice indeed.

According to Minister Bussemaker and many others, it is important that PhD candidates make it to the finishing line. Not completing your PhD is a waste of capital. What is more, if you drop out it will always haunt you, say the people around me. Those who stop live to regret it.

Well, hooray! I'm nearly there. My thesis has been passed, and if I can just get through the graduation ceremony, I'll be Doctor. Everyone I know is happy for me. 'That is something to be proud of,' they say. My mother nearly wept for joy when she saw the book. I'm not proud. And I'm not really in the mood for a party. I have no wish to marry science. In the course of doing my PhD it became clear that I don't fit too well in the academic world.

The first two years of the process were nice, and I learned a lot, but after that I started to lose faith in the usefulness of my work. And that did not blow over. Finishing my PhD was a slog and for me, the final thesis stands for all those unpleasant memories.

Now I'm done, I notice that my self-confidence has diminished and I've become less flexible. I see potential problems everywhere I look. I am less spontaneous, whereas that used to be my strong point. Meanwhile I hear people at my new workplace say PhD graduates are less in touch with society. I don't hear anything about the advantages of a PhD.

I regret finishing my PhD. If you ask me, that was a real waste of capital. **📍**

**Stijn van Gils** (29) is doing doctoral research on ecosystem services in agriculture. Every month he describes his struggles with the scientific system.



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### in brief

#### >>FOOD FESTIVAL Forum square

On 6 September, local businesses will be organizing an International Food Festival in the Forum square. From 10.00 onwards, there will be six food trucks with fare from cultures such as the Middle East, Brazil and Indonesia. Since 2016, caterers have been allowed to park their food trucks in the Forum square but so far sales have been disappointing and they have not been as busy as they would wish. Even so, the initiator Theo de Vries wants to continue, but in the form of events. 'In early April, we set up shop to mark One World Day and that was a big success. Perhaps we can do the same during WUR centennial events too.' **📍 MF**



PHOTO: REMO WORMMEESTER

#### >>SUCCESSFUL FUNDRAISING AID charity

This year's charity for the Annual Introduction Days (AID) was the Anne van den Ban Fund. The fund raised an estimated 3300 euros. About 1200 of the 2900 AID participants made a donation when they registered. In addition, polaroid photos and African delicacies were sold during the AID to raise money, while at parties students could donate the deposit on their cups. The Anne van den Ban Fund makes it possible for students from developing countries to study at Wageningen. **📍 LH**

#### >>WAGENINGEN RESEARCH Collective labour agreement

The WUR Executive Board has concluded a two-year collective labour agreement with the trade unions at Wageningen Research. In November staff will get a salary increase of 1.9 percent, followed by another 1.8 percent next year. The board also agreed to the unions' demand to do something about the work pressure. As in Wageningen University, a plan will be drawn up to make the pressure of work more manageable through training, less bureaucracy and more scope for staff to organize their own work. Agreements were also made on the long-term employability of staff and on a personal development budget. **📍 AS**

## PROTEST AGAINST SPEECH BY MATT RIDLEY

More than 20 members of staff at WUR, among them 11 professors, have told the Executive Board in a letter that they object to the presence of British author and businessman Matt Ridley as the main speaker at the Opening of the Academic Year on 4 September.

The Executive Board is giving Ridley a platform without creating any opportunity for debate, says rural sociologist Han Wiskerke, one of the signatories to the letter. Three young researchers will get to respond to Ridley's theme – 'science as the basis for optimism' – but that is all the scope for discussion the programme offers. Yet Ridley makes controversial statements about topics such as climate change, which have little or no basis in scientific research, says Wiskerke.

The Executive Board is astonished by the protest. 'It is customary at the Opening of the Academic Year to give a platform to speakers from different social, cultural or political backgrounds,' says spokesperson Simon Vink. Ridley has written books in which he supports his standpoints with facts, claims Vink. 'He is an erudite man with a science journalism background.' Vink also points out that Ridley will be giving a masterclass in Wageningen on 5 September – and then there *will* be an opportunity for discussion. **AS**

## 'THE WORLD IS GETTING GREENER'

As a result of climate change, the world is only getting greener there are no grounds for pessimism. So says British author and businessman Matt Ridley, the keynote speaker at the Opening of the Academic Year on 4 September. *Resource* asked him a few questions by email.

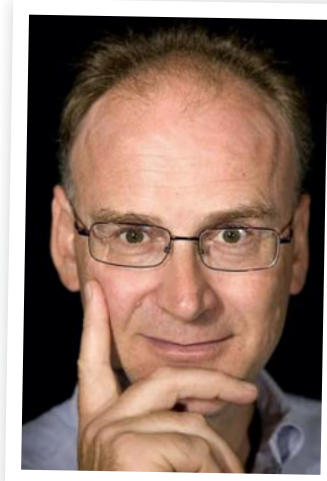
*Isn't it naïve to be optimistic in the face of threats such as climate change, overpopulation, the exhaustion of natural resources, and terrorism?*

'We could certainly achieve calamity with the wrong policies – ones that reduce cooperation and exchange. But equally, previous predictions of calamity have nearly always been wide of the mark. We were repeatedly told in the 1960s and 1970s that the population "explosion" was unstoppable and required drastic and inhumane actions. In fact, since

then the rate of increase has halved and we are on course to see world population cease growing by the end of this century. The main cause was the decline in infant mortality, which causes people to plan smaller families. In the case of climate change, there is a possibility of catastrophe, but there are three reasons to expect that it may not be that bad. Firstly, warming has happened roughly half as fast as predicted in the past 33 years. There has been no increase in drought and storms, while any increase in floods is down to land-use changes, not climate change. Secondly, current estimates of climate sensitivity have come down substantially, which indicates that dangerous warming is unlikely before the 22nd century. Thirdly, there is every reason to expect that new technologies will help us solve the carbon problem. Especially given how much richer the world will have become.'

*You believe in progress. What is the role of science and technology in this?*

'I do not "believe" in progress – I see evidence of progress. "There is no doubt that tech-



Matt Ridley

PHOTO: JOHN WATSON

nology and science make progress. That process – innovation – is responsible for the extraordinary improvement in human living standards over recent decades, to the point where just 9% of people are living in extreme poverty, down from 70% when I was born. This has also been accompanied by an increase in health, happiness, education and freedom, and a decline in pollution, violence and inequality. The world is rapidly growing more equal today, because people in poor countries are getting richer faster than people in rich countries.' **RK**

Read more about Matt Ridley coming to Wageningen on [resource-online.nl](http://resource-online.nl).

## RESEARCH IN A SHIPPING CONTAINER

Manon Mensink (front) and Eelke Westra of Wageningen Food & Biobased Research are working here in the new mobile research facility COOL – Research on the Move. From the outside it looks like an ordinary shipping container but on the inside it is an ultramodern research space. Here researchers can do tests to find out, for example, what is the best way to store mangos so they arrive in the shop ready to eat. This is interesting for countries such as India, China and Vietnam, where the production of fruit and vegetables has been increasingly rapidly over recent decades. Companies or government bodies can rent or buy the container and do research on location. **TL**



PHOTO: WAGENINGEN FOOD & BIOBASED RESEARCH

# SCIENCE IN THE SHOP WINDOW

There is no way of knowing from the outside what goes on inside the buildings on the Wageningen campus. Four new arty illuminated displays will therefore give visitors a peek into the themes of Wageningen research.

These four 'shop windows' – some of which are still under construction – are to stand outside Orion, the Forum and the Restaurant of the Future. They have been designed by the Eindhoven-based Studio Maatwerk, which also designed the room dividers in The Spot and the fencing on the Orion terrace. After talking to staff and students, René Vullings and Philip Bogaerts of Maatwerk picked out four research themes: genetic manipulation, biodiversity, consumer behaviour and soil science. Standing at the Forum is a double helix (genetic modification), at the Restaurant of the Future, a wooden 'letterbox' (biodiversity), and to the west of Orion a stylized landscape (consumer behaviour). To the east of Orion, a concrete soil profile is provoking discussion, as Vullings realized after talking to students.



PHOTO: GUY ACKERMANS

This 'shop window' in front of the Restaurant of the Future offers different perspectives on the theme of biodiversity.

'Everyone has their own take on particular issues. Take the application of genetic modification: there are very diverse opinions on that.' This element of varying perspectives is explicitly reflected in the design of the display cases, which

invite the viewer to look at topics through three different pairs of 'spectacles'. The displays consist of a blue metal object, an illuminated sign in which three posters are projected, superimposed on each other, and

a blue metal frame with three viewers in red, green and blue respectively. A different image in the display becomes visible through each of the viewers. The 'shop windows' still have to be installed at some of the sites. **© RK**

## GUNS N' ROSES

WUR will be 100 years old in 2018. That is going to be celebrated in style. *Resource* has already started delving into the archives and unearthing some interesting photos.

We're inclined to label this photo 'late eighties, early nineties', in view of the Guns N' Roses T-shirt one of the listening students is wearing. This is a soil science field trip. But where? And who with? A riddle to us, but maybe you can provide us with the story behind this picture. The photo is part of the *100 years of... listening* series on [resource-online.nl](http://resource-online.nl). Perhaps you are in it yourself, or it suddenly brings back a nice memory. Let us know! Drop in on the editors in Atlas or email [vincent.koperdraat@wur.nl](mailto:vincent.koperdraat@wur.nl).

Look up the *100 years of... listening* photo series on [resource-online.nl](http://resource-online.nl)



# PLASTIC YO-YOS IN THE OCEAN

**Large amounts of plastic get into the oceans every day. Where it all gets to is a mystery. Wageningen scientists now think that because of algae growth, the microplastic yo-yos up and down beneath the surface of the sea.**

The driving force behind this movement is algae growth. Algae attach themselves to the surface of drifting plastic and weigh it down, causing it to sink. But there is less light in deeper waters so the algae die off, causing the plastic to become lighter and rise to the surface again. Wageningen PhD candidate Merel Kooi of Aquatic Ecology and Water Quality Management has succeeded, together with colleagues, in capturing this process in a mathematical model.

The model predicts different behaviour of plastic, depending on the density and size of the pieces. All the plastic displays yo-yoing behaviour, Kooi explains. 'But only the larger particles come back to the surface during that movement. Particles smaller than 0.1 millimetres do not; we lose them at the surface.' The bobbing up and down takes place in the upper 100 metres of water. Larger particles yo-yo faster than smaller ones, and go down to a greater depth.

The big question is whether the model is an accurate description of reality. It is not easy to validate the theory with measurements, says Kooi. 'Taking measurements in the middle of the ocean is impractical.' The behaviour



PHOTO: SHUTTERSTOCK

predicted by the model does, however, tie in with the results of the few studies that are available. They show that small plastic selectively disappears from the water surface. The speed and timing with which particles sink matches observations of what actually happens, says Kooi.

The question is, then, what the consequences are of the vertical transportation of plastic in the ocean. Kooi: 'I am not an ecologist.

At the moment there is no evidence that microplastics are dangerous for organisms in the ocean. Is it a good thing that small pieces of plastic disappear from the surface? Is it a good thing that microplastic yo-yos up and down in a relatively small layer and does not reach the seabed? We don't know yet. In any case we need to know where the plastic is found if we want to answer questions about the effects it has.' **🔗 RK**

## SHEDDING LIGHT ON HOW PROTEINS BIND

**Researchers at Wageningen University & Research, the University of Amsterdam and Heinrich Heine University Düsseldorf have managed to map how proteins bind with one another in a living organism. The study opens possible avenues for new approaches in cancer research.**

Biologist Ikram Blilou at the Wageningen Plant Developmental Biology chair group headed the 11-year study, the results of which were published this summer in *Nature*. 'For the first time now, we can precisely monitor protein binding in a living organism and under normal physiological conditions. This binding determines to a large extent what a cell will become in the future.'

In a first in this field, the researchers implemented the imaging technique FRET-FLIM

in a living multicellular organism to visualize protein interactions by marking the relevant proteins with genetically coded fluorescent reporters, and determined the relevance of these interactions through genetic studies.

Blilou would certainly not claim that her research is the starting point for combatting or preventing cancer. That would be oversimplifying things. However, she does hope that the work will have an impact on the molecular study of protein-protein interactions during cancer progression.

FLIM-FRET imaging is not only a powerful, quantitative and non-invasive tool for screening the presence of tumours in vivo, but will also allow optimization of targeted therapeutic systems based on receptor-ligand mediated bindings in cancer cells.

Blilou has an urgent message for the scien-



**Ikram Blilou**

tific community and funding agencies. 'Fundamental research is increasingly being neglected, We must remember that applied science is only possible because it was preceded by fundamental research.' **🔗 VK**



# AQUAPONICS NOT VERY PROFITABLE

**Combining plant and fish farming by using nutrient-rich fishpond water to grow vegetables may sound like a smart and sustainable idea, but the results of this aquaponic system are disappointing. It is only profitable in places where both the fish and the vegetables fetch high prices, shows a Wageningen study.**

There are about 1000 commercial aquaponic farms around the world which combine fish farming with horticulture in this way. More than half of these farms make a loss, says Roel Bosma of the Aquaculture and Fisheries chair group. He supervised a group of Wageningen students who researched for a Dutch investor how he could make his investments in fish and vegetable farming in the Philippines pay off.

The students did a literature study and calculated the potential production level and costs of the farm, which produced freshwater fish, lettuce and tomatoes. Their conclusions was that the combination only stands a chance of succeeding if the farmer finds a good niche market for expensive fish, and combines that with growing lettuce and tomato, which are relatively expensive in the Philippines.

There is a hype around aquaponics at the moments, reckons Bosma. In terms of the circular economy and recycling of

resources, it sounds like a brilliant idea to grow vegetables in water from a fishpond full of nutrients. But if you don't take a good hard look at the market prospects before you start, it can lead to a financial disappointment. Bosma and a few students reworked the ACT report into a scientific article published in *Aquacultural Engineering*.

'With tilapia or catfish you won't make it because they are far too cheap. You've got to find a niche market for expensive fish,' explains Bosma. In Belgium and the Netherlands you can think in terms of pike perch, burbot or jade perch. 'The price you get for the vegetables needs to be good as well. The farms in Hawaii, where the hype started, generally do well because vegetable prices on islands are usually high.'

There is not much future in aquaponics in the Netherlands, says Bosma. 'Fish farming is too costly, relatively. What is more, it is difficult to find a niche market for vegetables in the Netherlands because in no time the horticulturalists will be producing for that market for a much lower price.'

But even in a country such as Ethiopia the combi-farm does not stand much chance. 'The first choice is often tilapia, but that product competes with the frozen tilapia which the Chinese sell throughout most of Africa.' **AS**



In the aquaponic system, vegetables are grown in nutrient-rich water from fishponds.

## VISION

### 'Hepatitis E-free meat is a pipe dream'

**There was consternation mid-August because Dutch sausages and ham were said to have infected thousands of British people with the hepatitis E virus (HEV). The evidence came from a study by Public Health England. What went wrong? 'It is difficult to prevent these sorts of infections,' says virologist Wim van der Poel of Wageningen Bioveterinary Research.**



#### *How can this virus get into meat?*

'The hepatitis E virus occurs on more than half of our pig farms and roughly 10 percent of the pigs are carrying the virus at the point of slaughter. That is how the virus gets into meat products.'

#### *Can this be prevented?*

'It is difficult to prevent infection: the virus can survive very well in pig populations. You can deactivate the virus in pork and meat products by heating them. That has to be done at a minimum of 70 degrees Celsius and for at least three minutes. The problem is that this is not done enough in the case of various products or by-products of the pork industry. Take raw sausages such as liver sausage, cervelat and dried sausages, for instance.'

#### *British pigs are infected with HEV too. Yet people are rarely infected with that strain. How come?*

'HEV is present on pig farms in Great Britain as well, and people get infected with it there too. There is evidence, though, that the European strain of HEV is found in the blood of British blood donors more often than the British one. But it is not clear why that is.'

#### *How much risk is there from other animal products such as milk?*

'In the Netherlands all cattle are tested for HEV antibodies and so far they are not carrying the virus.'

#### *Can't we test pigs and produced hepatitis-free meat?*

'HEV-free meat is a pipe dream for the time being. You have to set a realistic target and be able to say exactly what it means in practice. Less of the virus, or no virus at all? It would not be easy to make all the pigs in the Netherlands virus-free. And to then keep farms virus-free through extremely strict hygiene would be extremely difficult. You actually need to vaccinate, but there still isn't a good vaccine against HEV in animals.' **TL**

## NEW CHAIR OF URBAN ECONOMICS

**The Economics of Consumers and Households chair group will from now on go by the new name of Urban Economics, with alumnus Eveline van Leeuwen, now still associate professor at VU Amsterdam, in the chair.**

Van Leeuwen will succeed emeritus professor Gerrit Antonides in October. She studied land use planning in Wageningen and got her PhD in the Spatial Economics department at VU Amsterdam. She specializes in creating what are called input and output tables which provide insight into economic interaction between city and countryside, and between different sectors within a region. For her PhD research, she and her colleagues built up a dataset with information about the economic activity of households and companies in 30 regions divided over five countries. 'Then you ask questions such as: where do you shop, where do you work, etc.'

When Van Leeuwen was asked to apply for the new chair at WUR, she did not have to think about it for long. 'The subject matter is very interesting, and I was keen to work in Wageningen too. I'm working in a nice de-

partment at VU Amsterdam, but it is my first employer, and I would like to work in a different environment for a change.'

Van Leeuwen's brief will be the field of Urban Economics. 'All economics, in fact, that focuses on the geographical unit of city or region. Yes, that is a broad concept. I am focusing on the economics of sustainable consumption and a healthy lifestyle. How do city dwellers arrive at decisions, and what spatial determinant play a role in this? And secondly, on economics and policy at the meeting point of city and countryside.'

Urban Economics replaces the current Economics of Consumers and Households chair group. Van Leeuwen doesn't know yet exactly how she will go about her role as chairholding professor. 'I certainly want the research to be integrated into the Wageningen environment and to complement the existing chair groups. So first I want to inventorize who is working on processes taking place in the city, what economic aspects are related to them, and where there are still questions. A nice plan will come out of that, for sure. I am also curious to hear what students need, education-wise.' **© RK**



PHOTO: PETER GERRITSEN

**Eveline van Leeuwen: 'I am focusing on the economics of sustainable consumption and a healthy lifestyle.'**

## COLD MOUSE OFFERS INSIGHT INTO OVERWEIGHT

**The way mice keep warm during long cold spells is more complex than was originally believed. This discovery offers new insights useful for treating overweight and diabetes, shows a study by the German Helmholtz Diabetes Center in collaboration with others including WUR.**

The bodies of mammals contain two kinds of fatty tissue: white fat and brown fat. White fat primarily stores calories, while brown fat cells convert the calories in the body into heat. To generate this heat, the brown fat cells use the protein UCP1. The body can adapt to extended periods of cold by making extra brown fat cells in the white fat tissue.

'Until now it was thought that this was reinforced by the protein FGF21,' says Evert van Schothorst of the Physiology of Humans and Animals chair group. 'Scientists

see this protein as a key factor in the development of a treatment for overweight and diabetes, which is related to it. More brown fat ensures that the body starts burning energy, and therefore not storing it as fat. But it appears from our study that this protein is not absolutely necessary.'

In this study, published in *Cell Metabolism*, the researchers looked at heat regulation in mice exposed to cold over a long period. Through an adaptation to their genes the mice no longer made one or both of the proteins UCP1 and FGF21. Van Schothorst: 'We had expected things to go very badly for these mice. But it turns out that the mice which lack one or even both of these proteins have an alternative mechanism for keeping themselves warm and maintaining their weight.' It turned out that the white fat tissue has an-

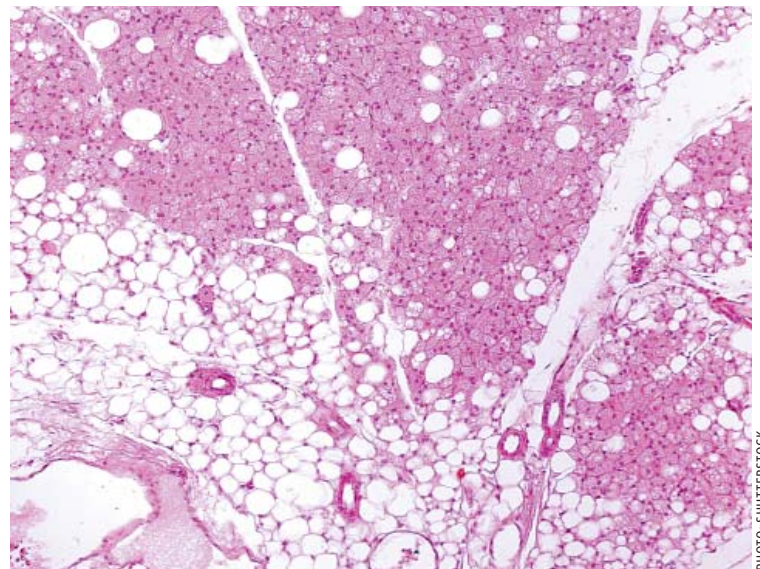


PHOTO: SHUTTERSTOCK

A microscopic image of fat tissues, showing large white and smaller brown fat cells.

other way of generating heat without UCP1. Even more remarkable was the fact that brown fat cells appeared in the white fat tissue, even when there

was no FGF21 protein. Whether this applies to humans too, Van Schothorst is not sure. That should become clear from follow-up research. **© TL**

The campus was quiet during the summer months but that did not mean nothing was going on at WUR. Here is a sample of the online *Resource* news stories that you might have missed while you were lapping up the sun.

#### HECTIC DAYS AT RIKILT



Researchers at Rikilt were working like mad in early August testing eggs for the presence of the

banned substance fipronil. *Resource* took a look and filmed a test being performed. View the film on the site and see Point of View on p. 20.

#### DAUGHTER OF...



The start of August was a tense time for WUR professor Lisette de Groot. Her daughter, Jackie Groenen, was one of the Dutch Lionesses who won the European Women's Football Cup.

Her cross was the assist for the decisive goal in the semi-final.

#### STUDENT IN CYCLING TV SHOW



WUR student and semi-professional cyclist Jan Willem van Schip was a guest in late July on the Tour de France TV show 'De Avontetappe', recorded in France. After-

wards, he cycled the 1000 kilometres back home. 'When you get fed up, you just dump your bike on the verge and sit down for a bit.'

#### BONSAI ART



Martin Bonvie is a bonsai artist. The Food Technology Master's student was bitten by the bug when he was 15. 'Elms are most fun to

work with. It's almost impossible to kill them and they bend nicely.' In the video, he shows how to grow a bonsai tree.

## MEAN- WHILE ONLINE

#### PARADISE FOR FUNGI



Been swimming in a campsite or hotel pool over the summer? If so, you are highly likely to have picked up

a fungus. Researchers from WUR and other institutions found 79 different species in chlorinated pools.

Check them all out  
at [resource-online.nl](http://resource-online.nl)

## PROPOSITION

### 'Do it properly or don't do it at all'

Wageningen PhD candidates are required to submit a separate sheet with their thesis, with propositions related to a range of scientific fields and topics that are 'relevant to society'. In one of her propositions, Franca Bongers takes aim at this custom. She explains her viewpoint from Beijing, where she is living now.

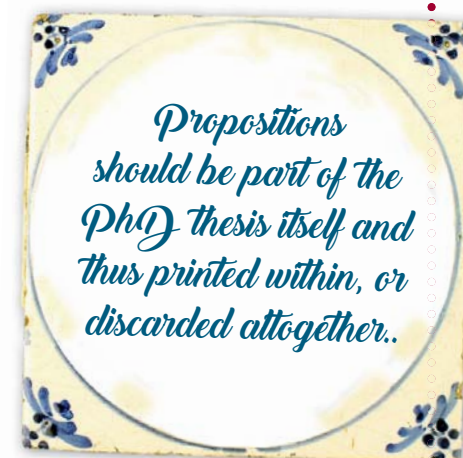
'I think it is confusing that it is compulsory to write propositions but they don't appear in your book. They are not assessed in the same way as your thesis: there is no peer review by the reading committee. So you get your PhD for two different components assessed by different stand-

ards. I would say: do it properly or don't do it at all.'

If I had to choose between those two, I would be inclined to scrap the propositions. They are nice for guests who

haven't read your thesis, but I think it's crazy that I, as a plant scientist, have to make a claim about, say, animal sciences. In the old days, that was appropriate: then you were a scientist in six fields at the same time and the committee was primarily testing your general academic development. Now academic practice is far more specialized. I can still make a statement about apes, but surely I don't understand the first thing about them?

As it happens, the very first question at my defence was about a proposition, my claim that there is more bias in the social sciences than in the natural sciences. That led to a nice discussion about prejudices in research.' **LdK**



Franca Bongers received her PhD on 4 July for a study of plasticity in plants.

# The Wageningen mission in Kabul

Wageningen University & Research has been helping develop agricultural vocational training in Afghanistan since 2009. Resource visited the project in Kabul. 'Some topics, like illegal felling or equality between men and women, are too sensitive to be raised in class.'

*text & photos* Alexandra Branderhorst

**H**ans van Otterloo is driven to work through the busy morning rush hour in Kabul in an armoured Toyota. On a dirt road winding uphill, the car halts in front of a steel gate. First, a guard runs a mirror on a stick under the Toyota to check whether there is a bomb underneath. Then the car is allowed past the walls and barbed wire surrounding the campus of the National Agricultural Educational College (NAEC).

The risk of attacks in Kabul makes such security necessary. 'As an education project, we are not targeted by the Taliban and those kinds of groups, but it is just a violent country,' explains development economist and project leader Hans van Otterloo. Wageningen Centre for Development Innovation (CDI), part of WUR, engaged him in 2011 to get the plans for agricultural education in Afghanistan off the ground. In 2009, the Netherlands had taken on the task of establishing and developing agricultural vocational education in this war-torn country. WUR – and more specifically the CDI – has been responsible for the implementation from the start.

## WEIGHING UP THE RISKS

'The security situation has worsened in the six and a half years that I've been working here. A lot of donors and aid organizations have withdrawn,' says Van Otterloo. But for the residents of Kabul, life goes on. 'When you live here, the day-to-day situation is not as threatening as it

seems from a distance. But you can be at the wrong place at the wrong time. You are constantly weighing up the risks.' Since a serious bomb attack on the German embassy in May, Van Otterloo has been working a lot from Dubai. He minimizes the risks by spending as little time as possible in Afghanistan. 'When I'm there, I talk to as many people as possible. I write up the reports after I've left again.'

## EVEN INTERNET

NAEC, which offers a two-year agricultural teacher training programme, opened its doors early in 2012. The Afghan management and several teachers received training in the Netherlands. The new building has plenty of space for the nearly 500 students currently attending the college, and a modern library which even has internet. Many of the students make their first acquaintance with computers here.

The women students (roughly 15 percent) come mainly from Kabul, while most of the male students come from the provinces and stay in the student flats at the college. There is also a college farm on the campus, with sloping fields of rose bushes, grapevines, apricot, apple and almond trees, as well as plastic-covered greenhouses, a fishpond, a chicken run and a cattle shed. In these facilities, the students learn the practical skills that they can pass on to their students when they go on to teach at one of the 180 Agricultural High Schools – comparable with vocational secondary schools in the Netherlands – throughout Afghanistan.

## FERTILIZING THE SOIL

To date, 653 people have graduated from NAEC (see graph), among them Rahimuldin Amini. With his NAEC diploma in the bag, he started teaching botany, farm management and zoology at Dakoo Agricultural High School in his home province of Jawzjan in 2014. 'The teachers here saw me using new teaching methods and became enthusiastic. They taught traditionally, focusing on passing on theoretical knowledge. The students were not allowed to ask any questions,' says Amini. He taught his colleagues ways of actively involving students in the lessons, and how to prune and graft plants and fruit trees. 'Now we teach these skills in practical lessons. We also use pictures and videos from the NAEC. The students are very involved now.'

Amini applies this knowledge on his own farm too. His crops include aubergines, tomatoes and okra. 'It is customary in my district to burn animal manure, but at the NAEC I learned to mix it with compost. Since I've been fertilizing the soil with this mix, my land has become much more productive.' He shared the technique with his brothers and neighbours. 'Now all the farmers in the surrounding area are using this method.'

## TOO SENSITIVE

For the past four years, Matilda Rizopulos of the CDI has been helping the NAEC and the Afghan ministry of Vocational Education to develop practical teaching material for the Agricultural High Schools. The teachers were



The building of National Agricultural Educational College (NAEC) in Kabul.



Students at a practical lesson in one of the greenhouses on the campus.

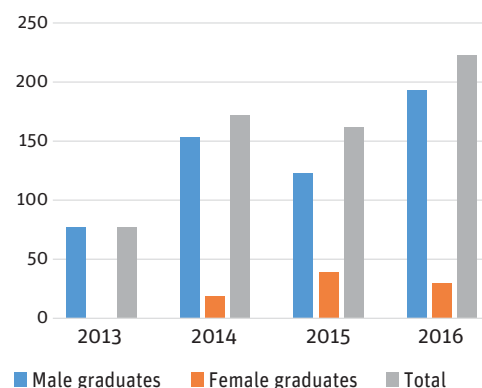


Project leader Hans van Otterloo in his office.



About 15 percent of the students at NAEC are women.

Graduates at NAEC



still using text books from before the Russian invasion in 1979. ‘By pooling our knowledge, experience and ideas, we came up with something new. It was genuine learning by doing,’ says Rizopulos.

Reality did not always match expectations. Some practical exercises, for example, took more time than planned for. And certain topics were too sensitive to be raised in class. ‘Like illegal felling or conflicts of interest around land use between nomadic herders and settled farmers. Or equality between men and women. And we also had to find alternatives for photos in the textbooks with women in them.’

The material that was developed was first tested in 10 Agricultural High Schools, and is now being introduced throughout Afghanistan. From this year on, the teachers at all the High Schools are attending training courses at the NAEC on how to use the interactive, practically oriented material. Rizopulos has visited the NAEC, and is impressed. ‘It is great to realize that this project is bringing about a big change in agricultural vocational education.’

**UNCERTAIN FUTURE**

Independent evaluations have shown that the new teaching material and methods are catching on in Afghanistan. The Afghan government acknowledges the importance of the project too. ‘The NAEC and the team around it are doing fantastic work,’ declares the Afghan State Secretary for Vocational Education Rahil Mohammed Formuly. ‘We are an agricultural country. Better agricultural education helps us develop our economy and society. Up-to-date knowledge of simple techniques can change farmers’ lives because they lead to greater productivity.’

The Dutch ministries of Foreign Affairs and Economic Affairs have spent a total of 17 million euros on the education project between 2011 and 2016. It was announced this spring that the Netherlands is making another 6.6 million euros available for the period up to 2021. And that in spite of Afghanistan’s uncertain future. Project leader Van Otterloo: ‘The knowledge will not get lost. If you have managed to give thousands of people a good agricultural education, you can call it a successful project. Even if the country collapses at some point, that knowledge will go on being applied and passed on for many years.’

# Eat your way to health



Dietary recommendations are mainly used to prevent disease, and seldom to treat it. They do have curative potential, but the Dutch healthcare system is not geared to that. 'It is cheaper to prescribe pills than to supervise patients over a long period in changing their eating habits and lifestyles.'

*text* Tessa Louwerens *illustration* Shutterstock

**I**n future, lifestyle and diet should play a bigger role in the treatment of chronic diseases. This is the drift of a report published this summer by a team of experts from Wageningen University & Research, their colleagues from other universities, and the National Institute for Public Health and the Environment (RIVM). 'Recently we have been seeing a revival of interest in nutrition and lifestyle interventions,' says project leader Renger Witkamp, professor of Nutrition and Pharmacology in Wageningen. 'In this report we summarized the potential of nutrition and looked at what it would take to exploit it better.'

The biggest benefits, say the experts, can be gained in the treatment of cardiovascular diseases and type 2 diabetes, which tends to affect the elderly. But dietary changes

can also benefit patients with certain types of cancer, kidney disease or lung conditions. 'A healthy diet not only supports the treatment but also improves the patient's general health, giving it a unique advantage over drugs,' says Witkamp.

#### HIGH COSTS

And the general health of the Dutch is not exactly blooming at the moment. Almost half of all adults are overweight and one third suffer from one or more chronic diseases, show surveys by the RIVM. 'These patients take a lot of medicines, with all the side effects and high costs that that entails,' explains GP Tamara de Weijer, chair of the Doctors and Nutrition Association. According to the Central Bureau for Statistics, the Dutch spent almost 95 billion euros on healthcare in 2015. Overweight and unhealthy lifestyles are responsible for about 14 percent of this healthcare burden.

The incidence of chronic diseases, with all the costs they entail, could be significantly reduced, believes De Weijer. 'A healthy diet works on several fronts at the same time. Weight loss in patients with diabetes, high blood pressure and raised cholesterol not only enables them to stop their insulin injections but also to reduce their doses of drugs for lowering cholesterol and blood pressure.'

### 'Directing patients to the greengrocer will become completely normal'

#### PERVERSE INCENTIVES

But nutrition and lifestyle interventions are still not being applied much in practice. According to Witkamp, this is partly to do with the way healthcare is funded. 'The current healthcare system works mainly with short-term models. It is cheaper to prescribe pills, the effect of which you see immediately, than to supervise patients over a longer period in changing their eating habits and lifestyles.'

This sounds familiar to De Weijer. 'As a GP you are exposed to perverse incentives. A doctor earns more if a chronically ill patient keeps coming to the surgery and having drugs prescribed. Health insurance companies cover operations and pills but rarely lifestyle interventions.'

According to De Weijer, this is one of the reasons why GPs pay too little attention to diet and lifestyle. 'Whereas at least three quarters of the medical problems we see are directly related to these things. Take diabetes, high blood pressure and cardiovascular diseases. In these cases, the drugs are not really treatments; they only keep the disease in check.'

There are a few diseases, however, for which the treatment protocol used by doctors does include dis-

cussing lifestyle interventions. But, says Witkamp, little is known about the extent to which doctors actually comply with these guidelines. From talking to colleagues, De Weijer's impression is that they do not often follow through on them. 'They find it difficult. It is time-consuming, or they do not think it is their responsibility.'

An added factor is that doctors do not learn much about nutrition during their training. In six years of training, medical students get an average of 29 hours of teaching on nutrition and 30 hours on lifestyle, says a recent report commissioned by the ministry of Health, Welfare and Sport.


#### NO PLACEBO FRIES

A further obstacle is the difficulty of obtaining scientific evidence in nutritional studies. Witkamp: 'In drug research you can carry out studies in which one group is given a pill and the other a placebo (a fake pill). But in nutrition research it is not easy to conduct these kinds of studies: there is no such thing as placebo fries.' And, adds Witkamp, nutrition studies often lack a clear-cut end point. 'Maybe you want to know how many people in the study have a heart attack. But you usually only see the results of dietary interventions decades later, which makes this kind of study extremely expensive and well-nigh unworkable.'

In the report, therefore, the experts argue for alternative research methods which take into account knowledge based on the practical experience of healthcare workers and patients. Witkamp: 'We are thinking in terms of things like eHealth programmes. People can monitor their blood sugars at home, for instance, using continuous glucose monitors, and send in their data. The advantage of this is that you can collect data from a lot of people over an extended period, and in a natural situation. It is important, though, that these data are processed and interpreted by experts.'

#### NEW CURRICULUM

For the healthcare system to make better use of the potential of diet, several things need to change, says Witkamp. He thinks doctors and policymakers could make better use of the expertise of health professionals such as dietitians and lifestyle coaches. And more attention should also be paid to the importance of diet and lifestyle in the training of doctors, nurses and other healthcare workers. 'In response to this report, a committee is being formed in collaboration with the ministry of Health, Welfare and Sport and the medical faculties, which will be tasked with developing a new curriculum for medical students, with more emphasis on diet.'

De Weijer is pleased with this initiative. 'Directing patients to the greengrocer instead of the pharmacy might take some getting used to now but in a few years we shall consider it completely normal. If lifestyle adjustments do not work well or fast enough, drugs are plan B.' Witkamp agrees. 'This requires more investment in the short term, but in the long term it will probably pay back when we have a healthier society.' 



## 60 KILOS OF LITTER A DAY

Theo Vos walks across the grassy field at the Forum with a green bucket in one hand and a litter picker in the other. He picks up a plastic bottle, which he keeps to one side. 'There is a deposit on that, it's a shame to throw that out. I'm thinking of


donating the money to a charity.' Vos takes good care of the 'garden,' as he affectionately calls the campus. As one of Facilities and Services' six groundsman, his responsibilities include keeping the grounds free of litter. He collects an average of

60 kilos a day, and not just plastic. 'I've come across a lot of strange things before now: from bicycles in the pond to toilet bowls, and once even a surf board.' Vos started out 30 years ago as a technician at the





Institute for Plant Protection (IPO). When he developed arthritis 10 years ago, he was given a more suitable job. 'I think in some companies I would have been made redundant, but the university offers so many possibilities. I am now in the

autumn of my life, but I am having a good time and it is lovely to be out of doors. Because I come into all the buildings every day, I talk to a lot of people too. I've built up quite a big circle of acquaintances by now.'  TL, photo Margriet van Vianen

# Better farmers thanks to tablets

The farmer field school is a tried and trusted concept. In their own villages, farmers are taught by experts how they can improve their food production. But what if those experts cannot reach their village, because of Ebola for instance? Researcher and filmmaker Loes Witteveen came up with a solution: the digital farmer field school.

*text Albert Sikkema photo Loes Witteveen*

**T**he idea of the digital farmer field school was born of necessity. The Dutch organization FairMatch Support was supporting 30,000 cocoa farmers in Sierra Leone in improving their production and qualifying for a Fair Trade certificate. Then came the Ebola epidemic in 2014. It was no longer safe for staff of the organization to travel to Sierra Leone, and the training programme came to a standstill. FairMatch came knocking at Loes Witteveen's door via the WUR Science Shop. Witteveen teaches at Van Hall-Larenstein University of Applied Sciences, and is a guest researcher with Wageningen's Knowledge Technology and Innovation chair group. She had previously developed visual learning strategies for the Ghanaian cocoa chain, and the question put to her now was how she could support the certification process in Sierra Leone from a distance.

Witteveen developed an interactive training programme for cocoa farmers, to be delivered through a tablet. She used animations to help the – in some cases illiterate – farmers to work with the tablet in small groups. The programme was also equipped with a possibility to ask questions of trainers in a 'back office', long-distance.

## KNOWLEDGE BANK

Witteveen developed materials along these lines on crop protection, an important topic in the Fair Trade certification. Hitherto, farmers got advice on this from agricultural extension workers, who showed them pictures of destructive diseases and pests. Because the extension workers could no longer visit the cocoa-growing region, Witteveen turned the tables. Now the farmers could take photos of a pest or disease with their tablet, and send it to the extension worker.

The design also included a knowledge bank in which the farmers could look up information on cocoa production. And because some of the farmers were illiterate, and they also had to collect data and fill in documents for the certification, at their request there were also modules on reading and arithmetic.

## HIGHLY PROMISING

Witteveen tested the prototype in three villages in Sierra Leone. Together with Wageningen colleagues, she evaluated the results last month in the journal *Telematics and Informatics*. The cocoa farmers were enthusiastic, could relate to the animations, and were capable of navigating their way around the programme. They also went out together to take photos of diseased trees and were in regular contact with the back office. For the extension workers, the innovation took some getting used to, says Witteveen, because they suddenly had to answer questions and actively present knowledge. 'They realized that they needed a back office themselves, to be able to answer all the questions.'

Altogether, this is a highly promising learning strategy, conclude the researchers, because the farmers can use it to actively study problems, and can decide for themselves when to seek advice or ask questions. But it has its limitations too. Witteveen: 'To use the tablet interactively you need electricity and a telephone connection. There were not many farmers in that part of Sierra Leone who had access to a charger. What is more, you need a well-trained and accessible back office.'

## DIRECT FEEDBACK

In spite of the potential of this first digital farmer field school, it is no longer functioning now. 'We had a big EU



project in Sierra Leone but that has been completed,' says project leader Ewoud de Groot of FairMatch Support. 'Now we are looking for follow-up financing.' Since the end of the Ebola crisis, farmers have been trained in the old way again, through group meetings with extension workers.

De Groot would like to develop the digital learning environment further, and test it with Loes Witteveen. 'For us it is not just about the tool itself, but even more about the innovative knowledge exchange with farmers in developing countries. The group meetings with extension workers are pretty top-down. In the digital environment, farmers can decide for themselves which knowledge they need. And in turn, we can learn how farmers acquire knowledge through the tablet. That is because we can monitor the behaviour of the farmers on the tablet, which means you get direct feedback. And that can further improve the interaction and communication with the farmers. So if we get further financing, we want a follow-up.'

#### MONGOLIAN STEPPE

Witteveen is not twiddling her thumbs in the meanwhile. She is now developing a second digital field school for a very different part of the world: Mongolia. The agricultural research institute there was working on an extension project for nomadic pastoralists, with support from an Australian institute at which a Wageningen alumnus was working. The alumnus knew of

**'To use the tablet interactively you need electricity and a telephone connection.'**



Filmmaker and researcher Loes Witteveen

Witteveen's work and invited her to a workshop on visual learning strategies, at which she presented her programme for the Sierra Leonean cocoa farmers.

Witteveen is now supporting the development of a tablet for nomadic pastoralists in Mongolia. On this tablet, they can find out, for instance, how they should manage their herds in the face of climate change. 'Now that there is

not much grass on the steppe, farmers tend to want to keep more livestock so as to build up buffers, whereas they would be better off keeping less, but healthier, livestock.'

The tablet can offer a solution in Mongolia, thinks Witteveen, just as it did in Sierra Leone. The digital learning environment can have added value for isolated farmers, certainly if it enables them to put questions to researchers and extension workers hundreds of kilometres away. The Mongolian research institute has tested a prototype in recent months. If the evaluation is positive, there will be a follow-up.

#### CHILD SOLDERS

Witteveen thinks the digital advisor could also be a way to get young people involved in agriculture again in less developed countries. And it is not just the children of farmers that she has in mind. A student from Sierra Leone is currently researching whether the digital farmer field school could contribute to the reintegration of child soldiers into agriculture in Sierra Leone.

The cocoa tablet can also open up a whole new world for the farmers. Witteveen produced a film for the tablet which shows how cocoa is processed into chocolate in the Netherlands. 'The farmers saw "their" cocoa arriving at the factory, and how thoroughly we clean the cocoa beans here before processing them. Then they understood the strict certification rules. It helps if you show farmers the production chain.' 

# LEARNING FROM THE FIBRONIL CRISIS

It became known at the end of July that a banned substance - fipronil – had been used against poultry lice on an egg farm in the Netherlands. Fipronil had ended up in the chickens and their eggs. A new food scandal broke out. What do Wageningen researchers think about the affair? And what can we learn from it?

text Yvonne de Hilster illustration Henk van Ruitenbeek

## Ivonne Rietjens



### Professor of Toxicology

'It astonished me that the Netherlands Food and Consumer Safety Authority (NVWA) talked of an acute danger to public health from the eggs with too high fipronil levels. **I wonder whether a toxicologist looked at the public warning before it went out.** Toxicity depends on the dose. A hefty margin is built into the norms for safe exposure. The norms are determined on the basis of animal studies, looking at what the highest dose of a substance is that has no ill effect on animals, and that level is divided by 100 to arrive at a safe dose for humans. So even if this safe limit is passed by double or treble the amount, you still cannot talk of an acute danger. But the law states that eggs must not contain any fipronil. So in this case it would have been better to announce that eggs had been recalled from retailers because a banned substance had been found in them, but that there was no immediate danger to public health. The main thing we should learn from this is that these kinds of scandal are not the biggest threat to our health. The biggest threats coming from smoking and from consuming too much fat and too much salt. Those things make a lot of people in the Netherlands ill and cause many premature deaths. Not the amounts of fipronil found in eggs.'

## Bart Gremmen



### Professor of Ethics in the Life Sciences

'You have to understand the fipronil issue from the point of view of the sector. It is a system that grew up in the 1950s when the broiler farming was separating from egg farming, and when innovation made it possible to produce large quantities of eggs. That system

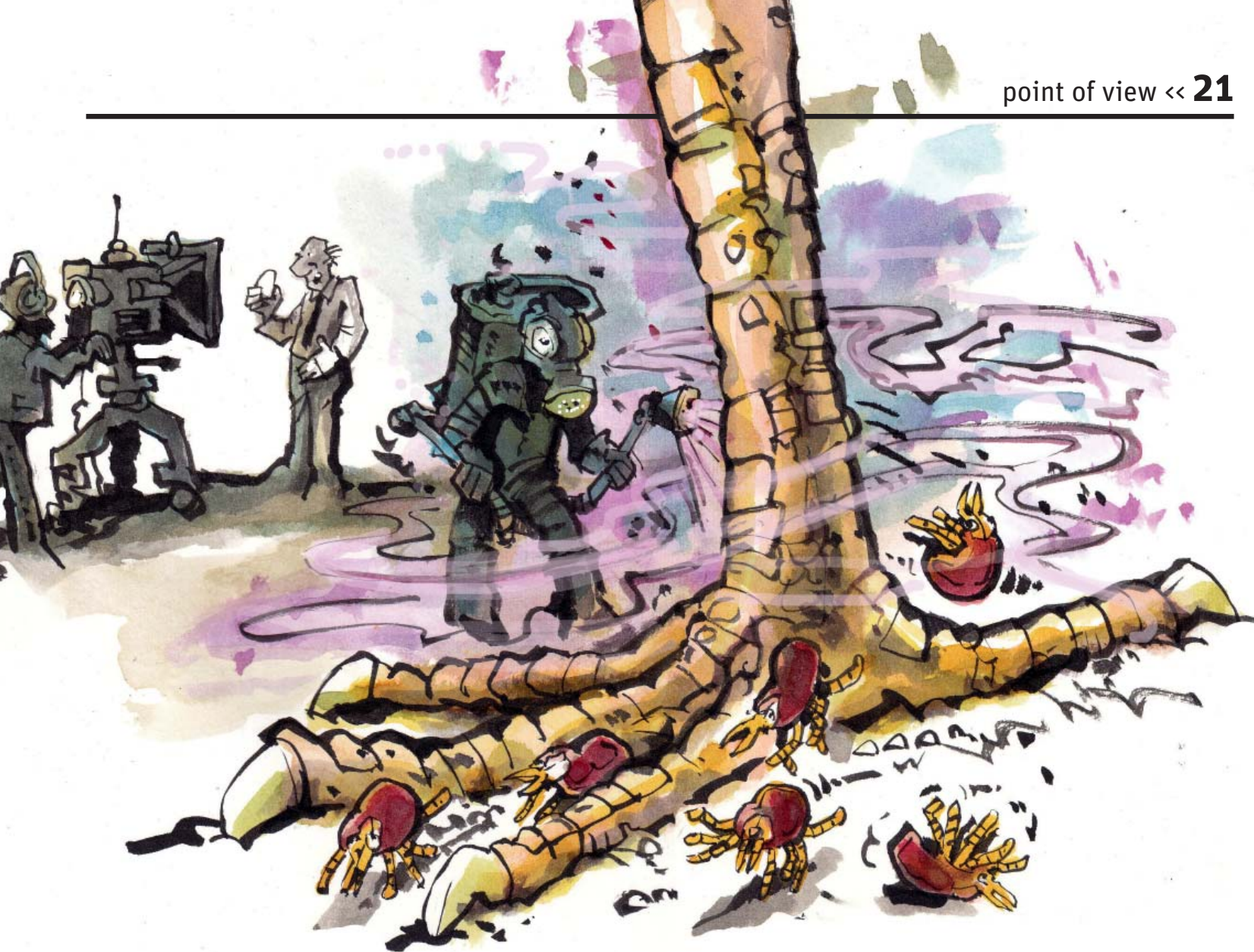
has disadvantages which you can't do much about. Like the processing of superfluous male chicks into feed. That poultry farmers hired a cleaning firm which turned out to be using a banned substance is a mistake that could happen anywhere. But a mistake like that disrupts the system. Eggs pile up or are destroyed, farmers starve chickens to get the fipronil out of their systems, or they kill them because there is nothing more to be gained from them. The system cannot cope with this kind of disruption, so poultry farmers face serious financial difficulties. **So you can only conclude that the companies in this system are constantly on the verge of bankruptcy. To be able to get rid of the immoral aspects of the system, you would need to charge a higher price for eggs.** But that won't rule out mistakes such as the use of banned substances. It remains the farmers' responsibility to insist on seeing the paperwork from a cleaning company like that. But a better price would create space to abide by all the rules as well as go for effective and efficient production.'

## Coen van Wagenberg



### Researcher on the economics of food safety at Wageningen Economic Research

'What struck me about the fipronil affair was that the NVWA and the National Institute for Public Health and the Environment RIVM did not put out exactly the same message. The one said: don't eat eggs for now. The other said: eggs are safe. **Citizens see these organs as one whole, as 'the government'. And they trust that government on food safety issues. Different messages undermine that trust.** For export products such as eggs you can see that abroad, the Netherlands is increasingly seen as a single player. So a problem affecting a few companies quickly affects all the others. What would be interesting to find out is whether the costs of even more monitoring out-



weigh the benefits. Our food is very safe but it is an illusion to imagine you can rule out all risks.'

## Jeroen Candel



**Assistant professor of Public Administration and Policy**

'At the beginning of this century the budget of the NVWA was cut and it was moved from the ministry of Public Health to Agriculture (now Economic Affairs, Ed.). There have been warnings of a declining standard of supervision ever since. In 2014 too, the Lower House sought information about bad practices and the reasons for them. It is too easy now to point the finger at the inspectorate, whereas nothing was done about all the signals sent. **So I hope that this crisis will ensure that attention is paid to the underlying causes of the problems at the NVWA.** A fundamental discussion is needed about what the inspectorate looks like. It strikes me as a good idea for this body not just to check up on whether the sector carries out its inspections properly, but to have its feet on the ground as a service itself. Also, the recent barn fires on Dutch farms show that there is a tension between risks and your mandate as an authority. The fact that a company observes the rules doesn't tell you whether it takes any safety risks.'

## Noëlle Aarts



**Professor of Communication and Change in Life Sciences**

'What the affair shows is that the facts as such are not very relevant in discussions. This is about poison, and something is poisonous if there is too much of it. But the Netherlands sets different standards on that than Belgium, for example. Things you can measure – such as temperature, particles in the air or fipronil in an egg – are known as “first order reality”. Second order reality covers interpretations, values and assessments. Things like whether you call a temperature cool or warm, or how many particles or how much fipronil we consider acceptable. In the discussions around fipronil, first- and second-order realities get mixed up. For most people it is not clear how people can arrive at different assessments based on the same facts. **The institutions could have explained how the maximum permitted level is arrived at in the Netherlands, and that a large margin of safety is built in.** Now there is plenty of scope for speculation and you can do anything you like with the information – which is happening too.'

# Warm welcome

'Nobody can party like the Dutch.' 'So nice to see students everywhere.' 'It was a balanced programme.' 'I've had a warm welcome.' Just some of the reactions of first-year students to the Annual Introduction Days (AID) with which they were welcomed in Wageningen last week. It was a successful mega-operation with 2900 participants. A photographic impression.

photos: Sven Menschel

Friday

Campus games



Saturday

Crazy 88 and  
Street Festival



Sunday

Sports DAY





Monday  
Crossing borders



Tuesday  
Beer cantus







Wednesday  
Info market  
& AID Festival



You'll find videos, stories, interviews  
and a lot more photos  
on [resource-online.nl](http://resource-online.nl)

**ZIPF**

What is the most frequently used word in this *Resource*? No idea. But it is sure to be used twice as often as the second commonest. And three times as often as the third commonest, etc... This predictability is known as Zipf's Law, named after the American George Kingsley Zipf, who formulated it in 1935. The law is universal. Linguists have been searching for an explanation ever since it was formulated.

**ZIPF 2.0**

A linguist at Radboud University in Nijmegen has found the explanation. It's something to do with linguistic rules and word classes, too complicated to explain here. But the Nijmegen model produces exactly the pattern that the American identified. A linguistic triumph. The most frequently used word in these two paragraphs is 'the', by the way. And it occurs exactly twice as often as the second: Zipf. QED.

**PERSONAL SPACE**

Fruit flies have their personal space, just like people. In fruit flies, that space is determined by the neurotransmitter dopamine, researchers at the Western University in Canada have discovered. Too little dopamine in the brain cells expands the area in which male fruit flies can tolerate each other. Too much dopamine reduces it. A shower works wonders too.

**DRUNK**

A goldfish can survive for a long time in oxygen-less water. This is because the fish can convert lactic acid (the product of anaerobic digestion) into alcohol, Norwegian scientists have discovered. Instead of being acidified to death, the fish gets drunk. If it had to be breathalysed, it would be banned from driving. No other vertebrate can perform this trick.



## 'Ceres light' membership for international students

**International students who want to get a taste of Dutch student life in W.S.V. Ceres student society can now obtain an international membership. Since it was made available this month, 12 students have availed themselves of this option.**

With this special membership, Ceres aims to make it easier for international students to sample the typical Dutch student culture, says president Janneke Sloet van Oldruitenborgh. 'That culture is unique, with its own customs and rituals. If you come here as an international student, it is nice to experience that.'

International students could already become full members of Ceres, but few of them did so, says Sloet van Oldruitenborgh. 'They often only stay in Wageningen for a short while, so membership is not really an obvious choice. The introduction period at the society is intensive, too, and international students don't always have time for that.'

So the international membership is a kind of 'light' membership. For 7.50 euros, foreign students get one year's access to



The Ceres stand at the AID Information Market.

special activities and parties in the bar. The activities, such as date-dinners, are geared to increasing contact between international and Dutch students. The language on these nights is English.

During the AID, 25 people expressed interest in the interna-

tional membership, and 12 of them actually signed up for it. They come from countries including Switzerland, New Zealand, Guatemala and India. International students can become international members of Ceres at any time throughout the year. **LvdN**

## Nine refugees to take courses

**Nine refugees will embark on a free course at WUR in September. The group will join students on one or more courses that have been opened up to people who do not yet have a residence permit, or who have a temporary residence permit.**

A total of 27 people have registered for this 'WURth-while' programme, says coordinator Marjolein Dannenburg. Nine of them will start next week on 10 courses, distributed over the various subject areas at WUR. Dannenburg is struck by the drive among the refugees who have signed up. 'Some of them have such beautiful and touching

stories to tell. Some people have taken such enormous steps, and through this project they can get a little bit of a helping hand. According to Dannenburg, a number of the refugees are aiming at a Master's programme in Wageningen. 'For them, WURth-while is a unique chance to start getting used to the education system here.'

When the programme was launched at the end of June, 40 courses were opened up, and now there are 85 available to refugees. Dannenburg finds the response of teachers 'heart-warming'. 'The Sociology of Development and Change opened up nearly all its courses. Other teachers have thanked me for the chance to take part in this project, instead of me thanking them for their contribution.' **LvdN**

## Wageningen iGEM team off to Boston

The chance of a field test sometime soon for tropical diseases has improved. This is the idea that has won the Wageningen student team taking part in iGEM, the international competition for synthetic biology, a place in the final in Boston.

The ten Master's students want to develop a rapid test for reliably identifying diseases such as Zika or sleeping sickness. The test should be accessible and cheap so that it can be used in poor communities as well.

The students are using genetically modified *E. coli* bacteria as an 'alarm bell', explains Bart Scholten. 'We modify a gene in the bacterium to make it respond to the presence of a specific disease. Then we let a reaction in this gene cause another gene to be activated. This makes the bacterium slightly fluorescent, which you can see with a LED light. If we want a test for another disease, all we have to do is modify the first gene again.'



The jury was basically enthusiastic, but did mention some areas for improvement.



Four members of the Wageningen iGEM team (from left to right): Bart Scholten, Niek Savelkoul, Linda van Oosten and Sabine van Oossanen

'We will be presenting our idea in America, where the story behind it will be very important. So we have to do more to sell our idea,' says Niek Savelkoul. More has to be done on the science as well. 'For example, we have to think about how we can keep the bacteria

alive at high temperatures too.'

The students will be working hard over the next few months to finish the lab work and find sponsors. They have also set up a crowdfunding project (see [crowdfunding.wur.nl/project/igem2017](http://crowdfunding.wur.nl/project/igem2017)).   **SvG**

## MEANWHILE IN... SPAIN

### 'My little sister was working near Las Ramblas'

Barcelona is still mourning the 16 people killed on 17 August, when a van drove into the crowds on the central boulevard of Las Ramblas and a car knocked down pedestrians in the nearby seaside town of Cambrils. Master's student Cristina Saladrich had been on Las Ramblas 30 minutes before the attack.

'I was in Barcelona when the attack happened. My home is quite far from there, but I had just been at the Ramblas with a friend 30 minutes before the event. The moment it happened, I immediately received a message and when I checked the internet I saw what was going on. From that moment on all my friends and family were checking on each other to see if they were okay. Luckily none of my close friends or family were hurt.



The scariest thing was that we didn't know where the attacker was.

There was a lot of information, but also a lot of incorrect information. Everyone in Barcelona was talking about it. The police thought the attacker was in a restaurant, which turned



out not to be true. My little sister was working near Las Ramblas and there was no security at all so she was very scared. And yes, I was scared too.

A few days after the attack, more than half a million people took part in an anti-terrorism march through Barcelona. My friends were at the march. I don't think it will change the mentality of the attackers, but it is good to show the world that we can do something. We should do something instead of sitting and waiting for it to happen. People did a really good job when it happened, they helped each other.

I think the government could have done more. When they attacked, the government already knew it might happen. They only put policemen over there, which was not enough. They should have done something to stop cars. Also the government should watch radicalized people more closely. Most of all I hope it won't happen again.'   **AB**



Cristina Saladrich, Master's student of Environmental Sciences from Barcelona, Spain, shares her experience of being close to the terrorist attack in her city.

# YOU ON CAMPUS

**Imke Reith (21) has experienced the AID in three different ways: first as a new student, then as a mentor mum, and now as a crew member. And in this academic year she will add yet another dimension, preparing the introduction period of 2018 as an AID board member. 'It is fantastic to create something big like that together'**

As AID participants get together for a barbecue, the crew are still hard at it. They can be recognized by their bright green shirts, the portaphone on their belts and the roll of duct tape under their arms. Imke can find time to chat but she first has to set up a podium. After all the heaving, carrying and puzzling, the thing is finally up and she waves her arms triumphantly. 'So, now I've earned a *stroopwafel*.'

Imke has just completed her BSc degree and is ready for a change. 'I like variety. I don't want to do yet another year of

courses, but to do something practical for a change. I am doing so many different things now; I am learning a lot.' Her next task is to crawl under the bridge between the Forum and Orion to lay a cable there. 'Fun, isn't it? You would never do anything like that otherwise.'

Imke is an experienced organizer: she has already served on the cooking

**'I don't want to do yet another year of courses, but something practical'**

committee and the sport committee at Ceres. 'I really enjoy coordinating a team. Being at an event and knowing you have made it possible: that fills me with energy.' She doesn't seem to find the long days tiring. 'As preparation for the AID board I am being timetabled as much as possible now as a crew member. We are usually done around midnight, and then



PHOTO: VEERLE DE GOEDEREN

it is time to relax and have a drink together.'

She loves getting to know so many people, especially her future fellow board members. 'By working on the crew together, you quickly form ties. The perfect way to start our board year.' **VdG**

## PARTIES

**In the party mood? Wageningen Party Promotion (WUP) tells you where to find one. See too [www.wageningenup.nl](http://www.wageningenup.nl).**



**CAFÉ LOBURG - LOBURGLIVE: JASPER SOMSEN INVITES**

**Thursday 31 August from 20.30 to 23.00**

Café Loburg is celebrating four years of LoburgLive with jazz. Performing on stage will be double bassist and composer Jasper Somsen (who also programmes Jazz in Wageningen), guitarist Tim Langedijk and jazz and soul singer Paul from Kessel. Come to this free birthday party for a fun evening full of music.

**WAGENINGEN - POPRONDE**

**Thursday 28 September from 16.00 to 04.00**

Every year, the touring music festival Popronde visits Wageningen. It's a great festival in the town centre with dozens of bands and an afterparty in café Luca. This is a not-to-be-missed event — worth staying the weekend in Wageningen for. Note it down in your diary and invite your friends from back home so that they can experience first-hand how much fun Wageningen can be. **G**



PHOTO: SVEN MENSCHER

**Students partying in the circus tent on campus at the final event of the Annual Introduction Days (AID) on 23 August.**

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

## Antelopes outside your tent

'We didn't know each other before we came. Independently of each other, we approached Frank van Langevelde of Resource Ecology in Wageningen because we were interested in his anti-poaching project. He wanted to use data collected from herbivores with a transmitter to track down poachers in Africa, thus contributing to the conservation of the rhino and the elephant. We emailed him, and a few months later we were bashing through the African bush in a Land Rover, looking for zebras, impalas, wildebeest and eland.'


### GPS COORDINATES

The idea is that we use the behaviour of other herbivores, so not the rhino or the elephant itself, to detect the presence of poachers. To do that we first have to relate behaviour to the data we get from the transmitters. In the safari car we go in search of animals with transmitters. The transmitters give the GPS coordinates and measure speed along three axes. We then note what the animal is doing. Running, drinking or grazing, for instance. My project focuses on linking the coordinates and speed data with behaviour. Christine looks at the behaviour of animals introduced into the area for the project. She is focusing on the question of how quickly these animals adapt.

### BABY LEOPARDS

In our spare time we go on safari in the Land Rover as often as we can, to enjoy the nature in the game park. It is different and exciting every time. We've been followed by elephants a few times. The young males, especially, don't like it if you get too close and they try and chase you away. Then you have to put the car in reverse and get out fast. In the first month we saw all the big five: elephant, buffalo, rhino, leopard and lion. We even saw baby leopards. That was a fantastic experience. Normally these animals are extremely shy.

We are doing the research in an area of 1200 hectares. We sleep in safari tents and as well as us, there are two South African students doing internships. We are quite isolated: it is 23 kilometres to the nearest village of any size and

three hours' drive to the city. So you can't just get on a bike and go somewhere. There is only a bit of electric fencing between us and the game. The first night we could hear antelopes fighting just outside the fence. We had no idea what it was. It was a bit scary.' 



## THE WORKS

**Who?** Julia Schäfer, MSc student of Forest and Nature Conservation in Wageningen and Christine Lijcklama à Nijeholt, MSc student of Ecology and Evolution in Groningen  
**What?** MSc thesis  
**Where?** Welgevonden Game Reserve in South Africa

Read all the interviews on [resource-online.nl](http://resource-online.nl)

Vacancies student member Programme Board from 1 October 2017 onwards

# Do you have a passion for education?

From October 1st, 2017 two student seats in the Programme Board are vacant.

The Programme Board (PB, former OWI board) is the legal board of all Wageningen University study programmes and consists of four professors and four students.

### Being a student member of the Programme Board you

- represent students from Wageningen University in the board that decides upon the content and quality of accredited study programmes and advises the Executive Board on various educational issues
- have the opportunity to take an in-depth look at the management of your university
- will enrich your curriculum vitae with education management experience.

### We are looking for a student who:

- has passion for education
- has ideas to develop and innovate the WU education
- has a proactive and critical attitude
- has preferably prior experience in (education) committees, a board, or similar
- is preferably from the domain Environmental Sciences (BBN/MFN, BBW/MEE, BIL/MIL, BLP/MLP, BMW/MES/MUE, MCL, MGI, MLE) or Technology and Nutrition (BAT/MAB, BBT/MBT/ MBF, BLT/MFT/MFQ/MFS, BML/MML, BVG/MNH)

Activities of the PB require approximately one day a week. This includes a meeting every two weeks on Wednesdays between 9:00 and 12:00.

Appointment is for one year, with the possibility of 2 re-appointments. You are compensated with three months of FOS (financial compensation for board activities) per annum.

### Procedure

Send your CV and motivation letter, in English or Dutch, before September 18, 2017, to [Hetty.vanderstoep@wur.nl](mailto:Hetty.vanderstoep@wur.nl) with CC to [marlene.janssen@wur.nl](mailto:marlene.janssen@wur.nl). The selection procedure will take place between September 19 and September 26.

If you want more information about the Programme Board see [www.owi.wur.nl](http://www.owi.wur.nl) or you can contact one of the persons mentioned below:

- [Hetty.vanderstoep@wur.nl](mailto:Hetty.vanderstoep@wur.nl), secretary Programme Board, 0317-481896 [Hetty.vanderstoep@wur.nl](mailto:Hetty.vanderstoep@wur.nl)

Current student members:

- Karel Brassier: [karel.brassier@wur.nl](mailto:karel.brassier@wur.nl)
- Douwe van der Leest: [douwe.vanderleest@wur.nl](mailto:douwe.vanderleest@wur.nl)
- Belle Bergsma: [belle.bergsma@wur.nl](mailto:belle.bergsma@wur.nl)
- Anneke Kuijper : [anneke.kuijper@wur.nl](mailto:anneke.kuijper@wur.nl)

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

Start September 2017

## English courses for employees

Cambridge courses  
(Advanced) Speaking Skills  
Professional/Scientific Writing in English  
Basic & Hospitality English  
Lecturing in English

*'Language is my window on the world'*

[www.wur.eu/into](http://www.wur.eu/into)

**Science Cafe Wageningen**  
[www.sciencecafewageningen.nl](http://www.sciencecafewageningen.nl)

## ORGANS ON A CHIP

Thursday, September 14<sup>th</sup>  
19:45 - Live music  
20:15 - Science  
Café Loburg  
FREE ENTRANCE

*prof. Albert van den Berg  
(University of Twente.)*

Sponsored by:

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## announcements

### ANNIE'S PUB

Dear Wageningen, fancy dropping in for a tasty specialty beer in one of the cosiest pubs in Wageningen? Then you are more than welcome in Annie's pub in the Asserpark basement! We open every Thursday at 20.30 and run fun activities such as karaoke, pub quizzes and games evenings. And if you feel like an extra-curricular activity which is not too demanding but is great fun, consider serving at the bar or on the board of this fantastic pub! Feel free to come by or let us know by emailing [annieskroeg@hotmail.com](mailto:annieskroeg@hotmail.com)

### NEW SEASON AT LENS FULL OF INTERESTING THEATRE FOR YOUNG AND OLD

The Lens Theatremakers Foundation is the place for theatrical activity in Wageningen: you get taught by professional directors, you perform, and you get involved in the other things that go into a theatre production (writing, design, technical support, PR, music). The Open Evening is Monday 4 September, starting at 19.45 and providing lots of info about the coming season, a chance to meet the directors and to tread the boards straightaway! For this season we are looking for actors aged from 8 to 101. Venue: The theatre at De Wilde Wereld, Burgstraat 1 in Wageningen.

[STICHTINGLENS.NL](http://STICHTINGLENS.NL)

### SHEET MUSIC AND MUSICAL INSTRUMENTS ON LOAN

The Van Ulven Foundation's music library offers sheet music, choral scores and literature on classical music. The rare pieces can be viewed, copied and borrowed by students (possibly on the internet). The foundation also lends out musical instruments. Library opening hours: every third Thursday of the month from 20.00 to 22.00. Location: Generaal Foulkesweg 1A, Wageningen.

[VANUVEN.NL](http://VANUVEN.NL)

### INTRODUCTION TO ZEN MEDITATION

The introduction course on Zen meditation starts on 13 September with 12 lessons on Wednesdays from

19.00 to 20.15. You will learn about posture, concentration techniques and how to bring more focus and attention into your daily life. Location: KenKon, centre for meditation, yoga and martial arts, Nieuwe Kanaal 11, Wageningen. Open day: 6 September.

[ZENINWAGENINGEN.NL](http://ZENINWAGENINGEN.NL)

### VOLLEYBALL PLAYERS (F) WANTED

Fancy playing first-class volleyball? Scylla Ladies 3 is looking for at least three ladies to complete the team. Due to injuries and dropouts, we don't have enough players to play matches. We train every Tuesday from 20.00 to 22.00 in de Vlinder sports hall at Hollandseweg 7 in Wageningen, and we play a match most Saturdays (in the region). We are a fanatical and jolly team with a mix of young and experienced players, led by an excellent technical trainer. Sign up via: [tc@scylla.info](mailto:tc@scylla.info). [scylla.info](http://scylla.info)

### FREE SURGERY FOR STUDENTS WITH SYMPTOMS OR QUESTIONS RELATED TO RSI/KANS

Every Thursday afternoon from 17.00 to 18.00 there is a free surgery for students with quick questions about RSI/KANS symptoms in arm, neck, shoulder, or about exercises and working posture etc. You will get advice on what to do about such symptoms (e.g. take breaks, get exercise, use work break software) and whether therapy is indicated. Location: the practice of Mensendieck physiotherapist Karin Vaessen, Kolkakkerweg 2 in Wageningen (entrance on the left of the building).

[BETEBEWEGEN.NL](http://BETEBEWEGEN.NL)

## agenda

### Friday 1 to Wednesday 13 september

#### FILMS FOR STUDENTS

*Louise en hiver*: a gorgeous, melancholy animated fairy tale in pastel colours about an old woman who stays behind in the French seaside town.

*Donkeyote*: a meandering portrait of Manolo, a romantic pensioner with big dreams who wanders through

the Andalusian countryside with his donkey and his dog. *Back to Burgundy*: a subtle summer film in which two brothers and a sister have to find their way in managing the family vineyard, which they do with heart and soul. Wine from Wageningen Wijngoed will be served! Venue: Wilhelminaweg 3A, Wageningen.

[WWW.MOVIE-W.NL](http://WWW.MOVIE-W.NL)

### Monday 4 September, 14.30

#### OPENING ACADEMIC YEAR

The theme is 'Science as the basis for optimism', with speakers including Matt Ridley, author and member of the British House of Lords. He will talk on: A greener cleaner world: reasons for environmental optimism. Registration on [www.wur.eu/oay](http://www.wur.eu/oay)

### Wednesday 13 September, 19.45-21.30

#### WURTALKS: TINKERING WITH DNA

The latest technology is making it possible to tinker with DNA codes, in humans and in plants. DNA seems like the holy grail of life, but can we shape humankind? And what are the possible consequences for our food supply? Venue: Forum, Droevendaalsteeg 2, room C222. In the WUR-talks series, good storytellers from WUR give inspiring lectures. Open to WUR students, staff and others who are interested.

### Thursday 14 September, 12.30-13.20

#### LUNCH WORKSHOP WAGENINGEN WRITING LAB 'PLAN FOR SUCCESS'

How do you start on your writing assignment in an effective way? That's the question we aim to address during this workshop. We will provide you with the theory behind the writing process and guide you in applying this theory to your own assignment! Be on time, as participant numbers are limited to 20. Free admission. Venue: C0106 Forum. Info: [info.wageningenwritinglab@wur.nl](mailto:info.wageningenwritinglab@wur.nl)

Deadline for submissions: one week before publication date (max. 75 words)  
Email: [resource@wur.nl](mailto:resource@wur.nl)

## colophon

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# >>TYPICAL DUTCH

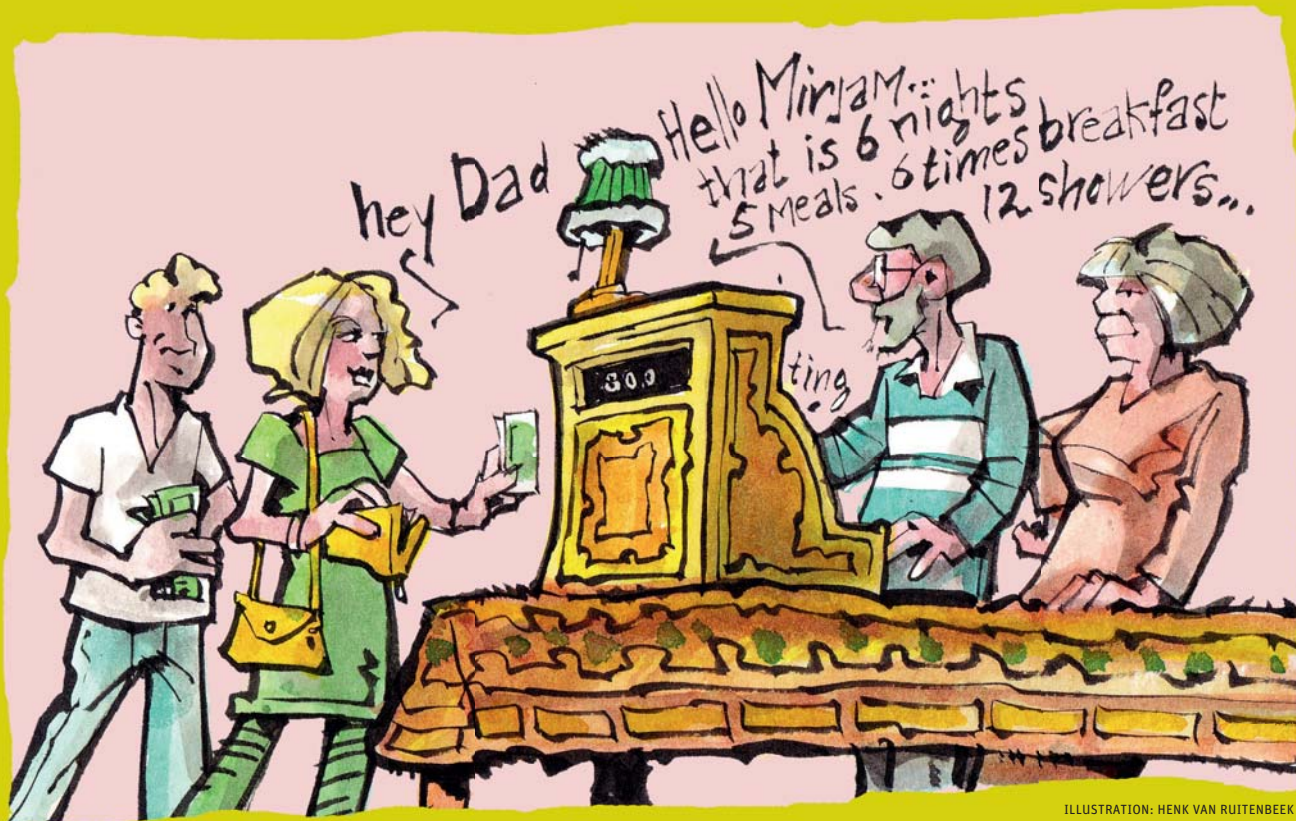



ILLUSTRATION: HENK VAN RUITENBEEK

## Paying board

**One thing I already knew about Dutch people, apart from the fact that they like to be on time, is that they are strict in managing their money. But I didn't realise quite how strict until a Dutch friend told me that she pays board to her parents.**

I was on a group activity with one of my new Dutch friends when she suddenly talked about job vacancies. It was the last week of the period and exams were coming up so I wondered why she would look for a job at that moment. Why not the week after the exam? She told me that she needed the job in order to pay rent to her parents. 'Sorry', I said, 'I must have misheard you. Did you say to your parents?' She smiled and replied: 'Yes, I still live with my parents.'

I was shocked for a moment because in my country parents usually provide for their children until they graduate from university or find a job, no matter how old they are. It is a common belief that what your parents own is yours. But that is not the case for Dutch parents. Apparently it is normal for Dutch parents to get a fee from their children for board and lodging once they are 18 and still live at home. My friends told me it was one way to show that you are an adult and you are responsible for your own life. It trains you to respect the value of work and income. Also, it teaches children not to take their parents' effort and possessions for granted.

I think this is cool, but at the same time I can't help trembling at the thought of how much my parents would have to ask me for to cover all the expenses they have incurred for me since I was 18. Thank God I'm not Dutch.  Nuruly Myzabella, Master's student of Nutrition and Health, from Indonesia

**'I must have misheard you. Did you say you pay rent to your parents?'**

*Have you had an interesting encounter with Dutch culture? Send your anecdote (in 250 to 350 words) to [resource@wur.nl](mailto:resource@wur.nl) and earn 25 euros and a jar of Dutch sweets. The editors reserve the right to shorten and edit the contributions before publication.*