Twilight classes

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RESOURCE [EN] For everyone at Wageningen University & Research

Their children are going to school now

Ethiopian farmers benefit from WUR projects | p.12



A PRINTED DRESS

Food, prosthetics, a coral reef... We can already make so many things with a 3D printer. So why not a dress, fashion designer Iris van Herpen probably thought. The dress was partly made out of 3D-printed plastic and was inspired by what the world looks like from above. This creation is on display until 22 July in the State of Fashion exhibition at the Melkfabriek in Arnhem. Projects from the WUR Fashion Lab can be admired too at this exhibition about circular-economy fashion. () TL, photo Sven Menschel

Take a look at the photo series on resource-online.nl

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EXTRAORDINARY AS USUAL

This magazine appears in the boxes around the campus every two weeks like clockwork. Walking past, you see a new cover and maybe you decide to pick up a copy. Nothing out of the ordinary about it. Yet ordinary things are often quite amazing, if you really think about them. This magazine is the work of a handful of people. They produce it 21 times a year. Meanwhile on resource-online.nl and social media, the same people publish more than 1200 news bulletins a year, accompanied by photo series and videos. That is a massive level of production, actually. And those stories have got to be interesting for students, staff and outsiders alike. They demand careful thought and angles you can't just come up with at the drop of a hat. When you read this magazine, spare a thought for the editors who provide you with WUR news day in day out.

After four years I am saying goodbye as editor-in-chief of *Resource* to start on something new. Off I go, looking back with pleasure, while the editors stay on and hold the fort. Do them – and me – a favour and let them know what you think of their stories. I could have done with a bit more of that over the years. Cherish this medium!

Edwin van Laar, editor-in-chief



>> Always wanted to dance Bollywood style? Do a course with the new Indian Association. | p.7

EIGHT MILLION FOR NEW PROJECT IN ETHIOPIA

WUR is going to coordinate a new programme aiming to bolster agriculture in vulnerable regions of Ethiopia. This programme, Realise, has been allocated a budget of eight million euros for four years.

Wageningen Centre for Development Innovation (CDI), working with Wageningen Environmental Research, is already leading several programmes in food-secure regions in Ethiopia. The Dutch ministry of Foreign Affairs is impressed by these programmes and wants WUR to strengthen the agriculture sector in food-insecure regions too, with improved seed and production conditions.

In recent years, Foreign Affairs has co-financed the international Productive Safety Net Programme in vulnerable Ethiopian regions. Households without sufficient food and income receive money from this programme in exchange for work. Now, however, the ministry wants to change tack in its participation in this programme, and that is where the new Realise programme comes in. In that programme, WUR aims to improve the livelihood security of poor farmers through agricultural knowledge.

The Dutch government also wants Wageningen to take on a bigger role in agricultural policymaking in Ethiopia. The WUR programmes are asked to collaborate more with the Agricultural Transformation Agency (ATA), an Ethiopian government organ that was brought into existence alongside the ministry of Agriculture to solve system-related problems in the food supply chain. The Netherlands is a donor to ATA, along with the Gates Foundation and Denmark. WUR's practical knowledge is rooted in five Ethiopian regions, but it should also be used to reinforce Ethi-



The Dutch government wants WUR to help strengthen farming in more regions in Ethiopia

opia's national food policy, says Jan Willem Nibbering, food security specialist at the Dutch embassy in Addis Ababa. Currently, WUR runs the Integrated Seed Sector Development (ISSD) programme in Ethiopia, which aims to improve the seed sector in the country, and the Cascape project, which identifies best practices with which farmers can raise their production and incomes. () AS

See also p.12: Sowing prosperity in Ethiopia

FOOD SAFETY LABS TO MERGE

Rikilt and the Netherlands Food and Consumer Product Safety Authority (NVWA) laboratory will merge on 1 January 2019. The new institute will be part of Wageningen Research.

Already eight years ago, there were moves to link up Rikilt, Wageningen's institute for food safety, with the labs of the government agency NVWA. In 2010, the then minister of Agriculture Gerda Verburg decided to merge the six NVWA labs, which were spread around the Netherlands, and move them to the Rikilt building on Wageningen campus. But a merger between the two institutes was a step too far. The NVWA was still starting up and marking out its position between the farming interest represented by the ministry of Agriculture (later Economic Affairs) and the public health interest represented by

the ministry of Health.

Never-ending cuts have meant the NVWA laboratory now focuses mainly on sample analyses and is unable to make use of innovative analysis methods. What is more, the NVWA lab does not have the capacity to respond flexibly to incidents and crises. Rikilt, which carries out statutory tasks for the government, still does have a strong knowledge basis. This means the labs complement one another well.

The merger will result in a new institute with a new name. That new name will be announced in September at the official signing of the transfer of the NVWA lab from the government to Wageningen Research.

The official signing might seem like a formality but NVWA still has to negotiate with the trade unions and Rikilt's works council has the right to be con-



▲ The Rikilt and NVWA labs are in the Vitae building on Wageningen campus.

sulted. The unions will have to consent to a social plan for the 128 NVWA staff who will be moving to Wageningen Research. These unions are involved in a conflict with the government over their collective labour agreement.

The merger will also have consequences for Rikilt, which has about 200 staff. To prevent conflicts of interest, the new lab will no longer be able to perform work for companies or NGOs unless the NVWA and the minister give permission. () AS

KING TO OPEN ALUMNI DAY

More than 1000 Wageningen alumni have signed up for the World Wide Wageningen Alumni Reunion on campus on 23 June. King Willem-Alexander will open the event.

At this festive alumni day in honour of Wageningen University's centenary, alumni can listen to each other's stories, look at Wageningen inventions on Innovation Square, and get to know the campus on a guided tour. There is also a cookery event, a performance by comedian (and Wageningen alumnus) Rob Urgert, and more entertainment by alumni. Alumni can meet

up and look for their old coursemates on Meet & Greet Square. In other places around the world too, Wageningen alumni will be getting together on 23 June to celebrate Wageningen University's centenary. Through a live connection, alumni on

five continents will engage in a discussion about how we can supply the big cities with enough healthy food in 2030.

The event will be opened by King Willem-Alexander. He will then visit Innovation Square to hear a bit about Wageningen research and talk to a few staff members, alumni and students. The king will also plant a tree on campus.

It is still possible to register for the Alumni Day on wur.nl. **@ AS**

in brief

>> FORUM INCIDENT JUDGMENT No punishment for perpetrator

The court in Arnhem will not be prosecuting the perpetrator of the violent incident in Forum. The court judged on Wednesday that the international student was not accountable for his actions when he attacked two people on 18 January. A psychiatrist concluded after an examination that he was suffering from a psychosis when he became violent. He stabbed another student with a comb and hit *Resource* journalist Roelof Kleis on the head. The other student suffered both physical and mental damage and will receive compensation of over 3000 euros from the perpetrator, says the court. **Q** AS

Find out more at Resource-online.nl.

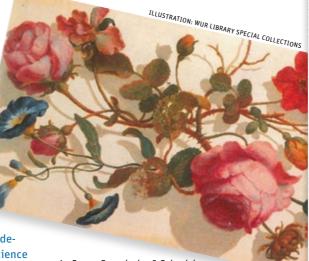
>> 100 YEARS OF WUR Set of cards

We already had a tie, sweater and bottle, but now the 100-year-old university's gift shop has added a set of cards to its assortment. The folder contains 10 cards with colourful drawings of plants and insects. The prints are from WUR Library's Special Collections. They were created around the start of the 20th century for publications popularizing the sciences for a

lay audience. The prints show an eye for detail and blur the dividing line between science and art, say the compilers. The set can be ordered at wur.unigear.eu. () RK

>> DUTCH ACADEMIA Guide for foreigners

How are students graded in the Netherlands? What is a 'professor occupying an endowed chair'? Where can you apply for research funding? To help international researchers find their way, the Young Academy has now published A beginner's guide to Dutch academia. Its 40 or so pages give an overview of the jargon and system in the Dutch academic world. The guide is full of quotes from an anonymous survey among researchers about the things that strike them in the Netherlands. One warns about the 'you only need a pass' culture, another found the Dutch custom of soon being on first-name terms difficult to get used to. You can download the guide from dejongeakademie.nl/en. 🚯 HOP



 Roses, Convolvulus & Calendula, anonymous artist (c. 1850).

COLUMN|VINCENT

seriousaboutwildlife

On a stopover at Jomo Kenyatta International Airport in Kenya, I was struck by the large number of warning signs. The message is loud and clear: you don't want to get caught with ivory in your baggage in Kenya. They take the conservation of their wildlife seriously here. That must be what the lobbying organization CITES thought too recently, when it spread the latest news from Kenya with the hashtag #seriousaboutwildlife: a proposed legal change to slap the death penalty on poaching. CITES (Convention on International Trade in Endangered Species) regulates the trade in threatened animal and plant species. Some of my favourite teachers work for this organization, one of the key opponents of the overexploitation of wild populations. With 182 member countries, CITES is an internationally respected institute and not the sort of club to champion the dead penalty.

So I don't think it was CITES's intention to express support for the death penalty with this rather casual tweet. But it put the organization in the dubious company of a few groups that do openly applaud Kenya's proposed new law. Among them One Green Planet, a platform that aims to help people make 'conscious choices'. The website is full of messages denouncing child labour, land-grabbing and modern slavery. But the death penalty for poachers? One Green Planet declared that a 'victory'.

Meanwhile, the CITES tweet has been quietly deleted. If you ask me, they missed an opportunity there. Because while groups like One Green Planet are forfeiting all credibility with their selective indignation, CITES could have made a public statement showing who is really serious about the conservation of wild animals. And has been for nearly half a century, without having to compromise on human rights. ()

Vincent Oostvogels (22) is exploring the delicate interface between nature management and food production through his two Master's programmes, Forest and Nature Conservation and Animal Sciences



Timetabler Fred Jonker on the extended daytime schedule **'We can minimize the inconvenience'**

The timetablers at the department of Education & Student Affairs are putting the finishing touches to the extended daytime schedule. This new timetable, with its 'twilight lectures' until seven o'clock in the evening will be published shortly and will come into effect in September. Resource asks head timetabler Fred Jonker how it is going.

Happy with the new timetable?

'I feel it is very well-balanced. With a longer teaching day we can make better use of buildings. At the same time, we can keep the inconvenience to a minimum and spread it fairly. We are really taking a step forward, keeping in mind the wishes of the faculty and of the Student-Staff Council.'

How many courses do you have to timetable, actually?

'There are an average of 200 courses per period. There are more big courses in the first and second periods, and a lot of small courses in period 5. In periods 3 and 4, which are shorter, there are about over 100 courses. We only timetable the courses and rooms, not the teachers. That is done in the chair groups.'

Students and teachers objected to the loss of long lunch breaks for consultation time. How have you catered for that?

'We agreed with the Student-Staff Council that we would divide the courses of each degree programme into two groups. That way we can guarantee per week that students would be free in the sixth period of the day, just before the lunch break, either on Tuesday and Friday or on Wednesday and Thursday.'

What new possibilities does the timetable offer? 'It offers more flexibility for courses because there are now six periods in the morning and six in the afternoon. We are now seeing that for regular courses people are more often requesting

2x3 class periods per week instead of 3x2 periods. Two periods on the old timetable was sometimes just too short, while three hours was too long. Only for the practicals we don't gain much. Practicals often need 4 to 5 periods, so you don't make optimal use of the morning or afternoon. We would therefore like to challenge teachers to start working with two groups, where possible, who do practicals one after the other in blocks of three periods. Then they could hold practicals for half days over three weeks instead of full days



▲ Fred Jonker: 'We have taken the wishes of the chair groups into account as fully as possible in the timetabling.'

for two weeks. That saves space and enables the team of teachers to provide for more students. This adaptation takes time, though, and we are willing to take the time for it. Such alternating groups will be starting this coming year for lectures, classes and group work.'

Do you expect a lot of requests for changes after publication?

'I do expect a bit more repair work than in an average year, but I am confident the timetable will deliver what we expect it to. Chair groups have filled in rather more wishes than usual this year, and we have taken those into account as fully as possible. Where there were no special requests, we timetable the course just like last year, as far as possible. We look at Wi-Fi use too: you can see from that whether a room has really been used. Did a lecture always start half an hour late, or did it always finish early? You'd be surprised to hear how much Wi-Fi traffic there is during exams, by the way. Teachers who imagine all the mobile phones are switched off in their classrooms would be in for a shock.' **Q YdH**

REMIND ME WHAT IT'S ALL ABOUT

Why the new timetable?

WUR is bursting at the seams. The extended timetable is supposed to cater for the growing numbers while avoiding evening classes (after 19:00 hours) and any need to immediately invest in a big new teaching building.

What is changing?

The teaching day will be longer, from 8:20 to 19:00. There will be 12 class slots of 40 minutes (instead of 10 of 45 minutes), with alternating breaks of 10 and 20 minutes between them. The half-hour lunch break will shift to 13:30. Students on a regular programme will have classes until 19:00 a maximum of twice a week.

No more classes at De Dreijen?

Because there are still renovations and moving going on in Atlas, for the time being two labs for practicals, three PC rooms and one lecture hall are in use at De Dreijen.

PEACEFUL SOUNDS TO ACCOMPANY BEETLE

Must Leave, the beetle sculpture in the pond near Orion, is already very eye-catching. But soon passers-by will be pricking up their ears as well, as the vicinity of the beetle will be filled with peaceful sounds.

'On the bridge you will be immersed in a sound landscape that enchants you and that is different every time,' predicts the instigator of the artistic project, Marten Scheffer, professor of Aquatic Ecology. 'The bridge is to become a dream bridge. A place which makes you feel calm and happy.'

Scheffer has created 10 basic compositions of sounds such as playing children, birds or chimes. The sounds are produced in response to the weather and the traffic on the bridge. Sun, rain, heat or frost: each kind of weather provokes a different kind of sound, evoking the emotion that goes with it.

The translation of weather and traffic into sounds is the work of the computer programme Simona (*Sensitive Infinite Musical Offering Naturalisation Angel*). The programme is fed by sen-



PHOTO: GUY ACKERMANS

sors measuring things like temperature, light intensity, sound levels and wind speed. The sound installation will start working on Thursday 21 June at exactly 12:07, the precise moment of the solstice. **G** RK If you looked closely, you could see that the left back leg of the pond beetle was hanging down a bit. It probably got broken when somebody tried to climb onto the beetle 'like a kind of Harry Potter on the dragon,' says Marten Scheffer. 'I just see it as a compliment: the sculpture has great powers of attraction.' The Danish artist Vagn Iversen has put the leg in a splint and will repair it soon. Signs and a camera have been installed to prevent further damage.



8 >> science

ANIMAL ETHICS IS DUE FOR AN UPGRADE



▲ Demonstrators compared the starvation of large grazers in the Oostvaardersplassen last spring with genocide. This is the kind of issue animals ethics should reflect on, says Bernice Bovenkerk.

Assistant professor Bernice Bovenkerk of the Philosophy chair group has been awarded a Vidi grant by the Netherlands Organization for Science Research (NWO) for research on the changing relationship between humans and animals. Animal ethics is currently struggling with this issue.

The way people treat animals is a frequent topic of heated public debate these days. Dutch examples are bloated factory-farmed chickens, the return of the wolf to the Netherlands, and the fate of the large grazers in the Oostvaardersplassen nature reserve. 'These issues create tensions and if we don't reflect on them, it will just lead to more dissatisfaction and protest,' says Bovenkerk. She thinks animal ethics could play a key mediating role between the public debate and the world of science and policy. But the ethics in question would need to change in the light of new insights. 'Until recently, a lot of animal behaviour was put down to instinct, but we now know that animals have many more capacities. They can learn, communicate, and have a basic sense of justice and altruism.' Animals are also capable of exercising an influence on their environment.

Animal ethics, says Bovenkerk, should not only ask what we legitimately may or may not do with animals, with respect to their wellbeing, but also what is the relationship between humans and animals. She sees that as an important question at a time when human beings are having such a huge impact on their environment. 'Wild animals are dying out en masse. Some animals, such as the wolf, are moving towards urban areas because their habitat has been destroyed.'

According to Bovenkerk, traditional ethical theories cannot encompass the changing circumstances and new insights of today. 'Current theories mainly present animals as the victims of mistreatment by humans, and not as active agents that exercise influence and set their own goals, whether consciously or not.'

We need to start thinking about

how we can live together, she says. 'That requires more sophisticated ethical theories.' **©** TL

TWO MORE VIDI GRANTS

SMART MATERIALS

With a Vidi grant in his pocket, Maarten Smulders of the Organic Chemistry chair group is going to look for a method of making smart materials with predictable properties.

Designing these types of materials – which react to the environment or are easy to recycle – is largely a case of trial and error at present. In future, chemists hope to be able to make substances with properties that they can predict on the basis of the molecules they use. Smulders is going to work on vitrimers, which are mechanically strong and robust at room temperature but they can be manipulated when warmed up.' He is working on a method of using these properties for his own ends. **Q RK**

MALE-FEMALE DIFFERENCES IN INSECTS

Male and female insects can be very different. Molecular biologist Eveline Verhulst has received a Vidi grant to find out why that is. She plans to look at three conspicuous differences between parasitic wasps of the Nasonia genus: the colour of their legs, the length of their wings and the sex pheromones. There has to be a genetic explanation for those differences, and Verhulst suspects it has something to do with the 'doublesex gene'. This gene is responsible for the different development of the two sexes in insects. 'The doublesex gene changes itself or it changes the regulation of other genes. We really have no idea.' Her research aims to clear up this point. 🔂 RK

ENDANGERED PIGEON SPERM GOES IN FREEZER

To prevent Dutch fancy pigeon breeds from extinction, the Centre for Genetic Resources in the Netherlands (CGN) will freeze the breeds' sperm.

'Most pigeon fanciers are retired and many Dutch breeds will disappear if no new younger pigeon fanciers take their place,' explains Agnes de Wit, who works at CGN. 'For example, a breed like the Hagenaar had only 50 birds left in the Netherlands in 2017.'

The sperm that the CGN will be freezing will serve as a kind of emergency backup. 'Of course it is better to keep a breed alive with sufficient genetic diversity. But if a breed becomes extinct, the frozen sperm can be used to cross-breed it back. If you use the sperm to inseminate female pigeons of a different breed, it takes about nine generations to get back a 99 percent pure version of the original breed.'

The researchers at CGN are currently developing a protocol for freezing pigeon sperm, says De Wit, as the protocol needs to be different for every animal species. First, the researchers are investigating whether the method for freezing the sperm of cockerels is also suitable for pigeons.

They will also look at how the sperm can best be collected. De Wit: 'The first time you collect sperm, the quality is usually poor. That's because the animals aren't used to it yet.' So far, the quality of the frozen sperm has not been good enough, with only 10 percent live sperm cells. 'We are aiming for 50 percent.' The researchers will be training the cock pigeons first so that they get used to the sperm collection and the sperm is of better quality. If that works, they will then look at how they can improve the freezing procedure.

According to De Wit, freezing ova is not an option as a complete egg has to be formed around the ovum after fertilization. That is why in vitro fertilization (IVF) is not possible with birds. It is possible to freeze the ovaries, though, says De Wit. If you implant them in pigeons of a different breed, you can bring back the old breed in a single generation. But this is banned in the Netherlands. **Q TL**



▲ The Groninger Slenk is one of many Dutch fancy pigeon breeds threatened with extinction.

VISION

EU has not gone for a food policy

European farmers are to get less direct income support and will have more climate-related and environmental obligations, but the member states will decide what



exactly. This is the European Commission's proposal for the Common Agricultural Policy (2021-2027). Krijn Poppe of Wageningen Economic Research had made suggestions for a new European food policy but he sees little of that reflected in the proposal.

What do you think of this proposal?

'The European Commission hasn't done much with the suggestions Louise Fresco and I made for introducing a food policy. There won't be an active consumer policy and there won't be any agreements with supermarkets getting them to contribute to climate-smart food production and the promotion of fruit and vegetables. It is classic agricultural policy and that's a pity.'

What is new in the plan?

'The most striking aspect is that EU member states will get scope to make their own choices. So the Netherlands will be able to draw up a plan to spend more agriculture funds on climate and innovation rather than income supplements for farmers. The Commission will check the plan but that latitude is there. That is genuinely new. I think it's good that countries can fill in the EU policy based on their own situation.'

Do we want the Netherlands to deviate from other EU countries?

'Some observers are afraid this will erode the uniform EU market. I think we will be OK because the EU will be checking the plans and has to approve them. In the Netherlands, we will now have an interesting debate on whether we want less income support for farmers and more money for public services such as the conservation of grassland birds.'

What does the EU want to do with the climate?

'Member states can make farming subsidies subject to conditions. For instance, farmers might only get income support if they satisfy climate conditions, such as no longer ploughing grassland or raising water levels in fenland. Now there will be room for such policies. I don't know whether the member states will use that freedom to achieve the European climate targets — that depends on what each region does.' **Q AS**

PHYSICIST SIMULATES SWARMING

Who or what determines how a flock of birds or shoal of fish moves? Joshua Dijksman found the answer on an air hockey table. 'Friction determines the swarm behaviour'.

Everyone is familiar with the fascinating swarming patterns of a flock of birds in the air. But how do the birds determine their collective course? 'The individual birds see and feel their immediate surroundings, but they have no idea where the flock is headed,' says Joshua Dijksman, lecturer in Physical Chemistry and Soft Matter. 'I wanted to know what leads to the birds' collective behaviour.'

To do this, he developed a model together with student Marcel Workamp and colleagues from North Carolina State University. They used a 3D printer to make circular discs with holes in that Dijksman then let 'float' above a circular table with holes through which air is expelled. Shaped holes in the discs meant that they started rotating automatically. 'The discs have rotational but not lateral kinetic energy; they can only move forward after a collision,' explains Dijksman.

This model is similar to the situation for a flock of birds or shoal of fish, in which the birds adjust the direction of flight or fish the direction in which they are swimming if they feel a fellow bird or fish close by due to air or water movements. 'The animals never collide. We think they anticipate based on air or water flows. Our results show this could be the mechanism controlling swarming.'

Dijksman designed the ventilation channels in the discs such that they rotate anticlockwise. When there were only a few discs, they tended to collide with the outer wall on their anticlockwise-moving edges, which made them rotate collectively in a clockwise sense. But when there were larger numbers, they collided more frequently with each another, edge to edge, and that eventually led them to all move in an anticlockwise sense. 'Friction is really important for swarm behaviour,' says Dijksman.

Dijksman works in the Physical Chemistry and Soft Matter group. On the reason for examining



▲ Birds in a flock may anticipate air flows, according to research by Joshua Dijksman.

swarms of active particles, he says: 'Our group works a lot with granular materials such as coffee and sand. These materials behave in a distinctive way: sometimes they flow, sometimes they get stuck. Our American colleagues were already investigating the interaction between particles using air hockey tables. We wanted to know how active particles would influence that flow behaviour. That was when we realized that our 3D printer could print these active particles.' The article appeared on 6 June in the journal *Soft Matter*.

This discovery may turn out to be useful in the longer term. If you can understand the principles behind a flock of birds, perhaps you can make new materials, thinks the physicist. **③** AS



PRINTED REEF

Six hundred kilos of Norwegian flat oysters have been put on the Borkum reef grounds off the Dutch island of Schiermonnikoog, some onto 'reef' from a 3D printer. The project is an initiative by the Worldwide Fund for Nature (WWF) and nature conservation organization ARK Natuurontwikkeling. They are going to work with Wageningen Marine Research to study how the oysters fare. 'Until the early twentieth century, about 20 percent of the Dutch North Sea was covered in oyster reefs,' says Pauline Kamermans of Wageningen Marine Research. Now the flat oyster has almost completely died out, in part due to overfishing and diseases. ()



WUR projects help Ethiopian farmers advance

SOWING DROSPERITY

ON OUR WAY TO THE FARMERS' COOPERATIVE WE HAVE TO GIVE WAY TO 100 DONKEYS

TOYOTA

Much improved incomes, new houses, all the kids in school... Ethiopian farmers are harvesting the fruits of long-running WUR projects, as *Resource* reporter Albert Sikkema saw on a tour of the East African country. The secrets of this success? Straight talk and good seed.

Text and photos Albert Sikkema

ddis Ababa is booming. New blocks of flats and hotels are going up everywhere in this metropolis with a population of four million. The Ethiopian economy has been growing by

10 percent annually for years, and foreign investors are queuing up. On the street outside my hotel, the SUVs of foreign consultants and NGOs come and go, and fashionably dressed Ethiopians walk to work in the morning. And then suddenly a couple of goats appear on the street as well. With no one guiding them they head calmly towards... yes, where are they heading actually? Even in this modern capital, the traditional Ethiopia is never far away.

Ethiopia is one of the 15 partner countries to which the Netherlands allocates part of its development aid budget. Over the past 15 years, Wageningen University & Research has set up a number of projects in the country (see inset). In the Integrated Seed Sector Development programme (ISSD), Wageningen Centre for Development Innovation (CDI) has been working for nearly 10 years on making improvements in the seed sector. And in the Cascape programme, the CDI and Wageningen Environmental Research work with farmers to identify best practices for boosting food production. I am going to visiting a few projects to see whether these programmes really are making a difference to Ethiopian food production. Because political unrest has led to a state of emergency being declared, the WUR office in Addis Ababa sends me off with a driver.

CHICK PEAS AND LENTILS

We leave Addis Ababa and drive along the new highway to Bishoftu, where we turn off onto a bumpy unmade road. On our way to a farmers' cooperative, we have to avoid hundreds of donkeys carrying food and firewood from the village to the market. We are going to visit Kolbe Seed Producers Cooperative, a participant in the ISSD programme. The cooperative consists of 70 farmers, 11 of them women, who work 362 hectares of land between them. They



▲ In the Kolbe Seed Producers Cooperative in Bishoftu, farmers grow chick pea, teff and lentil seed.

mainly produce seed for chick peas, lentils, teff and a little bit of wheat. The cooperative provides storage for the seed, which it also packages and sells. The farmers also share a tractor for ploughing their land.

In former times, such things were unheard-of, explains extension officer Aleka Argachew of the ISSD programme. In those days, all seed came from a government institute, and was not very good quality. With the help of ISSD, the farmers have tested and selected new varieties, significantly increasing production. What is more, they no longer have to return the seed they produce to the government, but are free to sell it to other farmers. This has enabled them to more than double their incomes. All the members of the cooperative send their children to school, says Argachew. 'The chairperson of the cooperative could even build a house in Bishoftu.'

Until quite recently, all seed in Ethiopia belonged to the state. This was a legacy of the communist era (1974-1991). If seed was bad or was delivered too late, nobody was held responsible, says Amsalu Ayana, manager of ISSD. The programme organized farmers' cooperatives which started to look at seed as business and a source of income. The regional government was resistant – afraid of losing control – but there are now 34 seed cooperatives in Oromia region. And direct seed mar-

WUR AND ETHIOPIA

Wageningen University & Research has close links with Ethiopia. WUR researchers are working on about 80 projects in the field of livestock, fisheries, irrigation, the environmental impact of migration, food quality, and the strengthening of food market chains. Most of the funding comes from the Dutch Ministry of Foreign Affairs, which has a long-term aid relationship with Ethiopia. An average of 65 Ethiopians are working on their PhD research in Wageningen every year. The number of Ethiopian Master's students at WUR has gone down from over 100 in the academic year 2012-2013 to 12 in 2016-2017. This is because of a fall in the number of scholarships available.



▲ Farmer Mikonnen has used his extra earnings from malt barley to buy improved cattle and build a new house.

keting by farmers is now permitted in 200 of the 600 municipalities in Oromia.

NEW HOUSE

We travel on to Hawassa, a regional capital in the south of Ethiopia. The landscape changes along the way. The savanna becomes greener, with more and more trees. In Hawassa, WUR works with local farmers on agricultural development in the Cascape programme: Capacity building for scaling-up of evidence-based best practices in agricultural production in Ethiopia. Behind this long name is an interesting project related to the supply chain for beer production. We visit a farmers' cooperative in the mountain village of Guguma, one and a

 These farmers have discovered the cash crop malt barley, thanks to WUR project Cascape.



half hours over bumpy mountain tracks from Hawassa. Here, 2600 metres above sea level, farmers have started growing malt barley for an Ethiopian brewery which has a malt factory 150 kilometres away. They started with five hectares in 2011, and now use 72 hectares.

The three farmers I talk to each have one hectare of land on which they grow enset (false banana), maize, potatoes and vegetables. They reserve more than half a hectare for malt barley, a cash crop they were not familiar with until Cascape suggested it, but which they now know is twice as lucrative as ordinary barley. With the extra money, farmer Mikonnen has built a new house. He can also send his children to a good school now, and he has bought improved cattle.

This programme's strong point is that it both improved the harvest and organized the marketing of the barley, says Tewodros Tefera, Cascape cluster manager in this region. Together with the ISSD seed project, his team selected the two best varieties of malt barley. Cascape optimized the fertilizer regime and cultivation method, increasing production from 1.4 to 3.7 tons per hectare. The farmers, united in a cooperative, now supply the neighbouring farmers with barley seed.

HEINEKEN

Cascape brought those neighbouring farmers together in a cooperative too, and facilitated the contract between farmers and the brewery for the barley supply. The brewery gave the farmers an advance so they could buy artificial fertilizer. Finally, Cascape arranged for the licences to produce seed, and the necessary checks at the regional agriculture office.

WUR is now trying to upscale the brewer's barley project with the help of the Agricultural Growth Programme (AGP). This is a Ministry of Agriculture programme for improving food production with the support of the World Bank (700 million dollars) and the Dutch embassy. The aim is to train staff at regional agriculture offices to replicate WUR's successful projects in other villages.

Beer brewer Heineken might well benefit from the brewer's barley project too. At present the multinational imports the malt for its Ethiopian brands of beer, but it wants to start using locally produced malt. The brewer has asked Cascape for advice on this. If it is successful, it will be good for the farmers and for Ethiopia's trade balance.

STATE CAPITALISM

Ethiopia is not an easy country for foreign investors. Like China, the government is trying to introduce a form of state-led capitalism, but there are divergent views on the role of the state and the private sector. This creates a lot of ambiguity and confusion, says Hussein Mohammed, ISSD scientific coordinator in the southern region. ISSD brings all relevant parties together – government, state seed companies, private seed companies, farmers' unions and independent farmers – and identifies the



▲ Cascape is helping farmers produced their own disease-free seed potatoes.

problems frankly. In this process, ISSD is not afraid to speak the truth, and this partly explains the programme's success.

As well as being ISSD scientific coordinator, Hussein Mohammed is also associate professor of Plant Breeding at Hawassa University. His colleague in the Cascape programme Tewodros Tefera works there too. WUR has

RINGTONES ARE HEARD REGULARLY; THE FARMERS ALL HAVE MOBILE PHONES.

established collaborative relationships with five Ethiopian universities, thereby forging links between scientists and farmers. WUR works in the northern region of Amhara with the university of Bahir Dar, for instance. Having travelled there by car and plane, I meet Yihenew Silassie, Cascape manager and associate professor at Bahir Dar University.

BACTERIAL WILT AND PHYTOPHTHORA

Yihenew and I visit several potato projects

where farmers are now producing their own seed potatoes. That required agricultural research because Ethiopian potato production is hampered by two diseases: bacterial wilt and phytophthora. Cascape tested six potato varieties for their yield, cooking quality and resistance to these diseases. The Belete came out of the tests as the best potato, and about 3000 farmers are now using it.

What makes things difficult is that the seed potatoes multiply slowly, says Yihenew. You need two tons of seed potatoes per hectare to produce eight tons of seed potatoes. But the ISSD seed project in this region has a solution. To find out what it is, we drive out of Bahir Dar and along the shores of Lake Tana, the highest altitude lake in Africa (1788 metres) and the source of the Blue Nile. Although we are at the latitude of the Sahel, the climate here is mild. We even pass rice fields. We are driving on Chinese roads: China has asphalted a lot of main roads in Ethiopia. That is good for the economy, but it is not a gift. Ethiopia must pay for the roads, my fellow passengers tell me.

At Debre Tabor, at 2400 metres, we visit a farmers' cooperative which built the first seed potato greenhouse in Ethiopia. The greenhouse is expected to produce 10,000 kilos of disease-free seed potatoes. Next year a second greenhouse will go up and that quantity will be doubled. The more than 400 farmers in the cooperative are going to multiply the seed potatoes on their own land. They have no more than one hectare of land and use an average of two thirds of that for subsistence farming. So there is only one third left for their cash crop, seed potatoes. Nevertheless, they are not doing badly. Our conversations are often punctuated by ringtones – they all have mobile phones.

The farmers currently produce an average of eight tons of potatoes per hectare, but ISSD's tests with disease-free seed potatoes show that a yield of 37 tons per hectare is possible, says scientific coordinator Dereje Ayalew. So this innovation by ISSD will now be shared more widely among farming communities. The Wageningen project recently received 45,000 euros from the Dutch government to do this.

CHANGE AGENT

The Wageningen programmes ISSD and Cascape really are leading to higher production and better incomes for Ethiopian farmers, show evaluations by the Dutch ministry of Foreign Affairs. 'Amongst other things, we saw

DUTCH ROSE GROWERS

The Netherlands is the third biggest investor in Ethiopia, after China and Turkey. Dutch horticulturalists have particularly strong connections with the country. Among them is Wageningen alumnus Wim Ammerlaan, who runs the large rose nursery AQ Roses. The 1100-odd Ethiopian workers at the company pick and pack about two million roses a week for the global market. Criticism of the low wages the company pays has sometimes been heard in the Netherlands. The greenhouse workers earn just over 40 euros a month - the going rate for unskilled labour in Ethiopia but not enough to support a family. Company manager Ron van der Hoorn points out that the workers also get free night school and health care, and stresses that AQ Roses creates employment. That is important in a country with a population of 100 million, 70 percent of whom are under 20 years old. All the Dutch horticulturalists between them create 15,000 jobs in Ethiopia. Companies such as AQ Roses do not contribute directly to the development of the Ethiopian horticulture sector, in the opinion of Dawit Alemu, manager of four WUR projects in Ethiopia. They are islands of large-scale efficiency in a sea of small-scale nurseries. But there are indirect effects. Some Ethiopian workers have watched how the management does things and started their own businesses.



that ISSD gave farmers access to good seed material, thus improving their food security,' says Jan Willem Nibbering, food security specialist at the Dutch embassy in Addis Ababa. What is more, says Nibbering, the programmes are leading to systemic change, with farmers getting better access to sowing seed and markets. In the words of the chair of the Ethiopian Seed Association Melaku Admassu: 'By talking about the problems in the Ethiopian seed sector, ISSD became the agent of change in agriculture.' **G**

16 >> looking back



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Guy Ackermans has been photographer for *Resource* and WUR for 35 years now. Capturing special moments through all those years. In this celebration year for WUR he shows us some of his most special 'pics'.

looking back << 17

IN THE TOILET

'I don't exhibit much, in fact not at all. But recently I suddenly saw this photo posted on Facebook. I took it in 2003 for a light feature about house recipes (mussels, in this case). As a cutting, I read on Facebook, the photo still graces the wall of the toilet in HVS Reymsdijck student house on Riemsdijkstraat. So I do exhibit after all, and much longer than the average photographer.'

Supercomputer analyses and filters existing knowledge Mining the data mountain

Which crop grows best where? Which species all have gene X? These are complex questions and we have never been sure how to tackle them. Feed all the available data into a supercomputer, however, and the answers will come rolling out.

text Stijn van Gils illustration Pascal Tieman

he amount of data obtained and stored in WUR has increased temendously in recent years. Where formerly a single plant would be meticulously studied to see what antibodies it makes, nowadays drones can use light reflection to estimate this for entire fields of plants in real time. And at the same time, we can follow developments around the world more closely. For example, the Laboratory for Geo-information Science and Remote Sensing is working on a system that monitors where illegal felling is going on, and how much, on a daily basis.

Dick de Ridder, professor in the Bioinformatics chair group, has seen this rapid increase in the amount of data in his field too. 'In 1988 a huge project started to map the entire human genome. The operation was completed in 2003. To date about 14,000 genomes have been completely mapped and another 85,000 almost completely.'

TOO BIG FOR EXCEL

That gigantic mountain of date makes it possible to answer new questions, explains De Ridder. 'Questions of an entirely different order.



For example: which species have one particular gene and which other genes does that go together with?' Other WUR groups are also trying to make more use of big data – datasets that are much too big for Excel. Animal Sciences, for example, is working a lot with machine learning, a technique with which a computer more or less autonomously searches great mountains of data for patterns. Other chair groups such as Genetics and Bioinformatics know a lot about this too. 'It's just that the knowledge and expertise is still scattered through the organization,' says Willem Jan Knibbe, head of the Wageningen Data Competence Centre (WDCC, see inset).

The WDCC wants to tackle that fragmentation and use model projects to bring together existing knowledge about big data. 'You can take simple questions,' says Knibbe, 'such as the age-old question of which crop grows best where. Several WUR groups have been doing research on this for years. Researchers have made growth models, set up experiments on different soils, and done economic analyses. But you can only solve part of the puzzle with such data sets,' explains Knibbe. 'Because it is a broad question that depends on a wide range of factors. The soil is one, but there is also the proximity of factories, a market or infrastructure such as harbours and roads. This nice thing is that we've got all that information at WUR.'

COMBINING DATA

Social scientists at WUR work with the Global Detector, a market information system. In the Environmental Sciences, the AgroDataCube is under development: a big data portal which includes weather conditions on plots of land and information about crop growth. Plant Sciences has the Akkerweb platform, which combines information about soil conditions and disease pressure in order to provide farmers with recommendations. The WDCC tries to support these initiatives and create combinations where possible.

The WDCC also wants to look at methods that help us to understand food security risks better. 'Can we mainly expect risks related to transport, to certification, or to some other part of the process? There is a lot of data that can tell us something about this, and with which we can pinpoint what to look out for specifically,' explains Knibbe. And what about methane emissions from barns? 'Do we need to measure this per barn, or even per cow? Or can we estimate it adequately using already registered information?'

SUPERCOMPUTER

New methods are under development for analysing gigantic datasets, says Knibbe. The standard procedure is to work with a sample, getting measurements for part of a group under similar conditions. In the case of big data, there is often information about the entire group, but it was measured under varying conditions. 'With this data we can discover all kinds of interesting relationships using Bayesian analysis or various methods of machine learning. It requires much greater computing power, beyond the capacity of an ordinary PC.' WUR has its own central supercomputer that can make large-scale calculations. This 'high-performance cluster', which consists of several servers linked together, can make several calculations simultaneously which would otherwise have to be made consecutively. Recently, this has been used more intensively, says Dick de Ridder. The plan to stop charging chair groups for each calculation separately is a particularly good incentive, he thinks. 'But the cluster is due to be written off soon, and the question is what we should do then.'

One option is to invest in a new one, but outsourcing to an external company would be another possibility. Some groups, such as Remote Sensing, already do this because they use data from external parties and prefer to have the computing done on computers that are located close to those datasets. On the other hand, a shared high performance cluster of your own ensure that groups can give each other tips and advice on using it, says Petra Caessens, manager at Shared Research Facilities. So she feels a shared supercomputer would be the best option. A decision has yet to be taken, however.

TROPICAL FOREST MAP

A nice example of combining datasets is Lucid (Land Use, Carbon & Emission Data), a world map showing the amount of biomass in tropical forest per hectare. The creators combined satellite data with a large number of field observations. Researchers can use the information about biomass to see where forest regeneration can lead to extra CO_2 storage. The map can be seen on lucid.wur.nl.

ASK THE DATA DESK

Last autumn, WUR set up the Wageningen Data Competence Centre to boost the use of big data. The WDCC supports chair groups in mining data, and is involved in education initiatives on big data. The centre inventorizes the available expertise in WUR and looks out for new possibilities for combining existing knowledge. Individual teachers and researchers can bring their questions to the Data Desk, which is partly managed by the WDCC.



Remarkable things can happen when artists get inspiration from science. And that kind of cross-pollination is being deliberately sought after in this centennial year of the university. With extraordinary results.

text Roelof Kleis photos Sven Menschel

The voice of the weather

When the eleventh edition of art exhibition *Beelden op de Berg* starts on Sunday 17 June, there is one artwork that will draw attention to itself: the *Meteofoon* by Dutch artist and composer William Engelen. The visible part of the installation is quite modest: four small white speakers mounted on poles in the rose garden at the Belmonte Arboretum. But the point is what you hear. From the speakers, a woman's voice will be

heard singing: 'promised – I – garden – never'. Or: 'pardon – beg – rose – you'. This might ring a bell with country music fans. They are words from 'Rose Garden', the song that Lynn Anderson turned into a classic. 'I beg your pardon, I never promised you a rose garden.'

Engelen's Meteofoon has a voice sing four words from the song every other minute, to a different tune. Which words are sung depends on the weather. 'We wrote a computer programme that compares the current air pressure, humidity, temperature and wind speed every minute with the measurements of exactly one day earlier,' explains Engelen. 'The differences are ranked on a scale with five levels above and five levels below zero. Zero means no change.³ That is the science behind the artwork, for which Engelen got the help of meteorologist Bert Heusinkveld (Meteorology and Air Quality). The measurements come from a small weather station that was already in the rose garden. That was what gave Engelen the idea of dusting off his Meteofoon, which he first came up with nine years ago.

So much for the science; now for the art. Each of the 11 levels on the measuring scale corresponds to one of the 11 words from the song. Each of the four loudspeakers therefore expresses one of the four weather variables measured. 'This gives you a real-time sound installation, which can change every minute due to an unpredictable factor: the weather,' explains Engelen. 'I lay down the rules and the structure within certain limits

and then the execution is up to nature. In the three months the exhibition is running for, there is never any question of repetition, of a loop. The music changes continuously. That is my translation of the *Beelden op de Berg* theme "eternal rejuvenation".'



A taste of body scent

Everyone has their own smell, artificial or not. But what role does that smell play? And can you eat it? A couple of slightly weird experiments around these questions took place in Impulse recently. Twenty-odd students and staff sniffed each other's armpit odours and tasted products that remind people of sweat. They were visitors at German artist Lauryn Mannigel's final presentation, called *Eat me*. As part of the Creative Innovation project, she worked for a while on campus on her study of the affective perception of body scent. Or: the role of body scent in how we experience other people.

'Scent and taste are suppressed and devalued senses,' says Mannigel. In her work, she interrogates why this is so, and how she can use her art to prompt a 're-evaluation of

'Scent and taste are suppressed and devalued senses'

scent'. 'Body scent carries a social stigma. I am looking for ways of reversing that.'

We often pick up scents unconsciously. And those scents evoke an emotion or feeling equally unconsciously. The food and beauty industries know how to exploit this. 'But how do we judge someone on the basis of the way they smell?' Mannigel wants to know. And that was what the experiment in Impulse was all about. The visitors let their armpit aroma soak into a little pad of cotton wool for 10 minutes. Then all the participants anonymously assessed samples from five others for the emotion aroused by the smell. Did it make you cheerful, aggressive, calm, cross or even amorous? And would you want to get to know this person?

The second experiment went a step further. In this one the test subjects were given four snacks and a drink that gave off body scents. To develop these, Mannigel had previously interviewed 21 students and staff at WUR. She asked them questions about their



perception of smells and tastes, experience with other people's smells, and the importance of the way someone smells in relationships and friendships. Quite personal questions, she admits. 'The last question was whether you could imagine being able to eat body scents and if so, what they would taste like. And that doesn't mean only nasty smells. Bodies can smell nice too.'

The recipes for the four snacks and drinks were based on the answers from the interviews. Their flavours varied from fairly tasty to varying degrees of unpleasant and downright gross. Mannigel's experiments are very different to the way scientists study odours under controlled laboratory conditions. 'A scientist would never do this. But as an artist I can get away with it. As an artist you must be challenging and interrogate issues. What I want to achieve in the long term is that people are more aware of how scent affects them.' **()**

ARTISTS IN RESIDENCE AND CREATIVE INNOVATION

In honour of its centenary, WUR has invited artists to turn their creativity loose on the topic of science. Ten artists have been linked up with scientists in a project called **Creative Innovation: Art meets science. The** idea is that the ensuing cross-pollination generates innovative ideas for both parties. The results will be on display in Impulse at scheduled times. Two artists, William Engelen and Anne Geene. were also both Artists in Residence on campus for a while. The resulting artworks can be seen in Beelden op de Berg in the Belmonte Arboretum from Sunday 17 June to Sunday 23 September. The work of 10 artists will be exhibited under the title 'eternal rejuvenation' referring to the innovation the university has been contributing to for a century.

OVERWORKING? GET USED TO IT!

Allens &

Researchers work on average over 25 percent more than the hours stated in their contracts. People with a permanent contract work the most overtime, shows a study by the Rathenau Institute. Is that bad? Or is working overtime just part of the deal in the academic world?

tekst Tessa Louwerens illustration Henk van Ruitenbeek

Bauke Albada



Assistant professor of Organic Chemistry 'Overtime is part of the deal, and personally I'd say 25 percent is a low estimate. By definition, scientists are people with a passion for their subject. If you're going to be able to play a leading role in your own field, you simply do have to invest a

lot of time in your research. Given that a researcher at a university has other tasks as well, such as teaching and management, he will have to make extra time to keep ahead in his scientific field. There's nothing wrong with that in itself, but it is good if you can keep it within reason so you don't run the risk of burnout and stress.'

Gauthier Konnert



Fisheries 'I think it's fine to work longer hours occasionally, for example when running an experiment. But I don't think it's a prerequisite for good science. You can also

PhD candidate in Aquaculture and

stick to 40 hours a week and be a productive researcher. But research is competitive and working more hours likely yields more results and potentially more publica**tions.** In that sense, ambitious people probably tend to work overtime, which is rewarded if they do indeed get more results. It's a personal choice and responsibility to balance your professional ambitions and personal life. If I want to work 60 hours a week no one will stop me, probably, as long as I'm doing fine. But I don't feel pressured.'

Ivonne Rietjes



Professor of Toxicology 'At the moment, working overtime is a systematic part of the deal in the sciences, and I think actually it is even more than 25 percent. The problem is that it is very difficult to get the work done in the available hours. These days you can't get

all your academic tasks done within the hours you were appointed for, especially with the large numbers of students we now have. This means you mainly get people who are extremely dedicated, and who partly see their scientific work as a hobby. And to me that's a positive thing.'

Joris Sprakel

Associate professor of Physical Chemistry and Soft Matter 'More than anyone else, scientists

should think outside the box, based on rational arguments. The reality is that in everything in our work you have to weigh up what you want to achieve

against how much time you can or want to spend. It also depends on how efficiently you work and how well you set priorities. "Overtime" makes it sound burdensome. I am crazy about my work so a lot of the extra hours come from sheer enthusiasm and then it doesn't feel like work.</mark> In short, nothing is compulsory and we can all make our own choices, as long as you go on making a genuine contribution to your field, the organization, and the education programme.'

Maria Forlenza



Assistant professor of Cell Biology and Immunology

'Science is the best job there is; you have flexibility and freedom. On paper nobody is asking me to work overtime and I feel it's my choice. But to make a career you have to show you are willing to go

that extra mile, and this may also require working overtime. I don't mind working extra hours and it doesn't frustrate me. Nevertheless, I am experiencing that there is a limit. I see many hard-working scientists putting in a lot of effort that is not always acknowledged, partly because of cutbacks on all fronts and ever higher expectations. There is only so much a person can do, even in the extra time. At that point the work starts to drain energy instead of giving energy.'

Yannick Weesepoel



'I do contract research, where you have clear-cut goals. There are firm deadlines and you need to be good at planning, but when time or the money runs out, that's the end. It is different at the university; there the work is never done. When I was

working on my PhD, no one thought twice about asking me to come in on a Saturday, and then everyone would be there, working away. Of course, I still work longer hours sometimes, but definitely not all the time. In one year there are about 1750 research hours, and if you go above that systematically, you get an extra member of staff. One person doesn't have to do one and a half jobs.'

Bernice Bovenkerk



Assistant professor of Philosophy

'Working overtime is an unwritten norm in the sciences. A disadvantage is that it promotes inequality and I think it's a gender issue too. I myself have children, for example, and I can't live up to that norm. It sounds strange, but I started working

four days a week so I have the chance to work overtime on my day off. I sometimes get frustrated that I don't have enough time for things like keeping up with the literature. You have a lot of extra tasks as well as research and education. That fragmentation means you hardly get round to research in the end. I recently got a Vidi grant. So it is possible, even if you can't do a lot of overtime.' 🚯

Wageningen does well

About 1500 students from all over the Netherlands came to Wageningen last weekend for the Great Dutch Student Championship (GNSK). Wageningen performed very well in the competition on its own territory, coming second – the best result in years.

text Luuk Zegers and Julia Schäfer photos Guy Ackermans and GNSK

The Wageningen athletes were successful in several events. They came first in the squash, men's basketball, frisbee, women's triathlon, men's Olympic weightlifting and men's cycling. No one scored against the men's football team until the final, when they lost to Amsterdam by one goal (1-0). The Wageningen gymnasts came second too.

As chair of Thymos, Esther Veldhuizen was responsible for the Wageningen delegation. 'I am proud of how well we have done. Actually Wageningen focusses more on offering a wide range of sports than on top sporting achievements. Great to see that even so we can hold our own at a high level.' Only Nijmegen did better than Wageningen: the Nijmegen team got to take the GNSK cup home, just like last year. Groningen came third.

BLIND TRUST

Every year the GNSK supports a charity. This year it was Running Blind, a foundation that helps people with visual impairment with running, walking and Nordic walking. At clinics GNSK members could experience what it is like to do sports with visual impairment, or what it is like to guide someone who is visually impaired. 'We wanted to do more than just donate money,' says GNSK press officer Luc Roefs. 'Through this experience, when you literally have to have blind trust in your buddy, we try to make students aware of what it means to do sports with a visual impairment.' A cheque for 950 euros was handed over to Running Blind at the prize-giving ceremony on Sunday.

SHORT OF SLEEP

Roefs looks back with satisfaction on the biggest student sporting event in the Netherlands. 'After all, for a whole year you spend an incredible amount of energy on the preparations. And it all comes together in three days of sport and partying. On Friday I got three hours' sleep, on Saturday two, but during the day I was too busy arranging things to be tired.' Roefs considers the GNSK to have been a success. 'Both for the sport and for the atmosphere. Enthusiastic participants, nice parties, lovely weather and no serious accidents. And we came second: fabulous.' **@**



Check out the photo series and video on resource-online.nl



▲ GNSK competitors enjoy a bite to eat in the sun.



student << 25

at home GNSK

Boxing took place at in a tent at De Bongerd sports centre.





GNSK competitors experi-ence what it is like to do sports blind.

Wageningen MSc student Julie von Gruenigen won the sprint triathlon.





▲ An area of the grounds of De Bongerd sports centre became a campsite for a couple of days.



Rugby was one of the optional sports. Eindhoven (in green) won.

14 June 2018 – **RESOURCE**

DISGUST (1)

Disgust can protect us against disease. Researchers at the London School of Hygiene & Tropical Medicine have established a taxonomy of disgust based on this fact. We are disgusted by skin diseases, wriggling heaps of insects, rotting food, deviant sexual behaviour, lack of hygiene, disease and deformity. And that disgust helps keep us healthy.

DISGUST (2)

The disgust study, conducted among 2500 people, resulted in a kind of spectrum of disgust. We are most nauseated by pus-ridden skin infections. Deformities score the lowest. It is striking that men feel much less disgust than women. The gender differences are greatest in relation to insects and sex.



HUNGER

Brain cells direct their messages towards each other via tentacles (dendrites). But there is another more random way of doing it via the cerebral fluid, biologists at the University of Southern California have demonstrated. The neuropeptide that gives off a signal of hunger in the hypothalamus of rats communicates this way. So cerebral fluid is not just a warm bath for our brains. It is a medium of communication.

KILLING TIME

Research at Ohio State University showed that we are less productive in the period before an appointment. That time seems shorter than it is, revealed a series of ingenious experiments. At such moments we overestimate how much time it would take to get a useful task done, and we postpone it. Instead, we start reading emails or killing time. The solution: plan your appointments back to back.

Scholarships for African students

WUR is awarding five full scholarships worth 60,000 euros to African Master's students this year. The aim is to limit the drop in the number of students coming to Wageningen from Africa, and to keep the international classroom diverse, says education director Arnold Bregt.

The number of foreign Master's students in Wageningen is going up but the number of students from Africa is going down. The main reason for this is that Nuffic, the Dutch organization for internationalization in education, is allocating fewer scholarships to students from developing countries. Many Africans are dependent on the Nuffic scholarships because their own countries don't have a scholarship programme. In the past few years, the university has exempted dozens of students from developing countries from paying tuition fees (18,000



WUR students at the Winter AID in 2015. The number of African students has fallen sharply in recent years.

euros per year). But many African students still cannot make ends meet. The Anne van den Ban Fund awards about 10 grants for living costs to students from development countries every year. The combination of the tuition fees exemption and this grant has enabled 10 students from developing countries to study in Wageningen. A further five per year can now come, thanks to the new scholarships. The university has already selected the first five outstanding African students, who will start in September. **@ AS**

Four WUR students in chemistry final

Four of the eight students in the final of the Top Sector Chemistry Student Competition 2018 are from Wageningen. Interestingly, they are all Bachelor's students.

The Chemistry top sector's student competition is organized in partnership with the research funding agency NWO and is being held for the fifth time. Three teams will be competing for the main prize, which will be handed out in December at the CHAINS conference.

The Good Gut team consists entirely of Wageningen honours students. Jip van der Linden, Mark van Leeuwen and Severin te Lindert are working on a microcapsule that you can ingest to introduce live intestinal bacteria into your guts. This could be an alternative to faecal transplants for people with an intestinal disease.

The Beads vs Beats team pairs Molecular Life Sciences student Sophie van Lange with Roel Borgers, a Mechanical Engineering student at Eindhoven University of Technology. They aim to develop a material that effectively deadens low frequency sounds. This 'metafoam' is a porous matrix with minuscule beads in the pores that respond to a sound wave with antiresonance.



WUR students make up the entire Good Gut team.



WUR student Sophie van Lange and Eindhoven student Roel Borgers of the Beads vs Beats team.

The third team, Cavity Catalyst, is from the University of Amsterdam and is focusing on the use of light-matter coupling to control and influence molecular properties. **()** LVK

Bollywood dancing classes at Indian Association

There is a new student society in town: the Indian Association. Chairperson Kaavya Raveendran: 'We want to share India's rich culture with people from here, and help Indians to feel at home in Wageningen.'

The association was established during the celebration of the Holi festival of colours last April. At this festival, singing and dancing partygoers traditionally throw coloured powder all over each other. Although the members are all from India, the association is not inward-looking, says Raveendran. 'A lot of the 100 guests at our Holi event were internationals from other countries.' The Indian Association also collaborated with other societies. 'We and IxESN recently organized an Indian Kitchen at KSV Franciscus, cooking Indian food for students. You can also join us to watch cricket or Bollywood films, and shortly we'll be running a Bollywood dancing course together with ISOW.'

Because of the big cultural differences, people from India often have a hard time when they first arrive in the Netherlands, says Raveendran. The Indian Association wants to welcome newly arrived Indians to Wageningen and help them integrate. 'Indians who already live here can tell the newcomers about cultural differences and how to cope with them. And we organize special days for the members, at which Indian alumni talk about PhD and career possibilities.' **G LZ**



▲ Wageningen students at the Diwali festival of light in 2016.

MEANWHILE IN... ITALY 'Populism is not an Italian phenomenon'

The new Italian government formed by the anti-establishment Five Star Movement and the anti-immigration party Lega are the talk of the international press. Discussion focuses on the potential threat the coalition is seen as posing. PhD candidate Simona Pedde thinks the reporting tends to paint a one-sided, stereotypical picture of her country.

'I follow the news from my home country using various Italian and foreign newspapers and media. In the Italian media you tend to read anti-German, anti-Europe and anti-migrant news. In Northern European media the story is different. The respected British *Guardian* and the Dutch *nu.nl* have a different level of depth and analysis, with *nu.nl* the more superficial and sensationalist of the two. What they have in common, though, is an underlying sense of "imminent disaster" coming from Italy.

If you are looking for unflattering depictions of Italy and Italians, I recommend the British *Economist* or the German *Spiegel*. Overall,



Simona Pedde, PhD student from Italy, talks about the situation in her home country. non-Italian media tend to publish stories confirming the stereotype of Italy performing badly. I can see that people are entertained by that. People present inter-



▲ An illustration accompanying the article *Italy's New Government Goes Full Trump* on the American opinion website The Daily Beast.

pretations and opinions as if they were facts. The rise of populist parties is related to this. It is not an Italian phenomenon but is happening all over Europe and the western world. In my view, Italy faces serious internal structural problems and needs support from a reformed European Union, a union of the people themselves. The new government promised more money for all citizens. I seriously doubt that they will reach their goal since I do not see them providing a clear vision on how this would work. Another main goal of the administration is to reduce the number of migrants in Italy. Funnily enough, they do not care about the number of people leaving Italy. There are many Italians who would like to stay in their home country but are leaving because they have no opportunities there. I have serious doubts whether the new government will be able to deal with the current challenges. I hope they will prove me wrong.' **@ JS**

ON CAMPUS

Do you like to spend your holiday lying on the beach or in a hammock? Elena Nera (24) certainly doesn't. Every summer she rolls up her sleeves somewhere in the world as a volunteer. This year she wants to work for WWOOF (Willing Workers on Organic Farms) in her home country, Italy.

Between her Bachelor's in Italy and her Master's in Plant Sciences in Wageningen, Elena spent a whole year doing voluntary work. 'I helped with communication for a refugee reception centre in Italy. That meant going into schools with a refugee and telling children where refugees come from and why.' Elena also went to Argentina during that gap year. 'That's where my mother comes from. Spanish is my second language.'

Elena had decided on a gap year because she wasn't sure what she wanted to do next. 'My Bachelor's degree was very broad and I wanted to do something in agriculture because that's about the environment and

development, looking at both sustainability and social processes. I don't want to focus strongly on specifics; I would rather keep an overview.' Elena looked for an agricultural university and ended up in Wageningen. 'I thought it was boring here at first

'Voluntary work is an easier way of travelling'

and very, very small. The total opposite of Rome, where I come from.' But she changed her mind after some time. 'It is very international. I meet new people all the time.' That is what appeals to Elena about voluntary work too. 'I've been to three different summer camps now, all on different topics and in different countries. It is a relatively easy way of travelling because it is usually cheap and you don't have to organize a lot



holiday.' Elena has taught English in Thailand, helped with nature conservation in Switzerland and looked after children in a summer camp in Florida. It is a nice way of exploring countries, she has found. 'In Thailand I stayed with a host family in a very small village. When I went travelling around the country after that I was so amazed at the difference between that life and the Thailand that tourists see. It is not the same at all.' 🛈 AvdH

PARTIES

In the party mood? Resource tells you where to go.

THE SPOT – PUB QUIZ

Wednesday 20 June from 18:00 to 21:00

The last one of the season. For 2.50 per person, your team can do battle with other groups of WUR students. The Spot organizers promise another session of 'riveting questions'.

CAFÉ LOBURG – SAONDA BACK TO THE STAGE

Saturday 23 June from 22:30 to 1:30

'We are not dead!' say Chilean student band Saonda. Last year they performed at the Liberation Festival and that was supposed to be it as they were graduating. But now they are back with great danceable cumbia.

DE BONGERD POOL – FESTA LAFRIQUE

Saturday 23 June from 19:00 to 3:00

A genuine pool party to mark the end of the season with LAfrique Dance Company's salsa, merengue and kizomba dancers. After the barbecue and workshops, you can swim, flirt and dance to your heart's content. @



▲ A packed dance floor at the annual PhD Party in Junushoff theatre on Friday 1 June.



student << 29

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.

Breeding miniorgans in New Zealand

'I read an article in National Geographic about the safest countries in the world. New Zealand was one of them. That made me think: cool, I'm going to a kind of Wageningen 2.0, in terms of security. As it turned out, that wasn't the case. It wasn't safe to walk around the city centre alone after a night out. There were lots of youths hanging around looking for trouble, and I saw several fights in pubs. Cycling is not the same there either. Although a lot of people do cycle in Palmerston North, the car drivers are not used to it. There are a lot of accidents. And it is compulsory for cyclists to wear helmets and safety vests.

PIG CELLS

My research was about organoids, cultured mini-organs. It is a very new technique, using cells to grow a new organ. We used cells from pigs' colons to create a new colon. Then we put fermented cow's or goat's milk into it to see how the organoid reacted. We looked at what was produced at cell level and in terms of fermentation. It is very difficult to research this in the body. And this new model is more realistic than what you get using an individual cell culture. So it is a useful middle way, and that makes it interesting for further research. Work is still going on to find an optimal culture technique.

BOUGHT A CAR

A friend and I bought a car together, a Princess. We went off in it every weekend. It seated seven people so we could take other interns and friends along. That was supercool. The most amazing experience was when we went skiing on Mount Ruapehu, a volcano. You looked out over the whole valley and that was very beautiful. It was quite challenging for me to go to New Zealand. It is on the other side of the world, so people couldn't just drop by. But once I was there I found out how nice it is to get to know all sorts of new people. I was so busy with everything that I wasn't often homesick. It was an advantage that most of the foreigners there were alone. That meant we all had a lot of time for each other and invested a lot in each other, because we didn't have anyone else. That made for very close contact.' **G** FJ



 Who?
 Charlotte Hendriks, MSc student of Food Technology

 What?
 Internship at research institute AgResearch

 Where?
 Palmerston North, New Zealand

More interviews on resource-online.nl



▲ Skiing on the volcano Mount Ruapehu.

Orion Irregular Opening Hours Summer 2018

	Date	Monday to Friday	Saturday and Sunday		
The Building	2 July to 8 July	8 am - 6 pm	Closed		
	9 July to 5 August	Closed	Closed		
	6 August to 2 September	8 am - 6 pm	Closed		
Bikebasement	2 July to 8 July	8 am - 8 pm	Closed		
	9 July to 5 August	Closed	Closed		
	6 August to 2 September	8 am - 6 pm	Closed		
The Spot	2 July to 8 July	8 am - 8 pm (closes Friday 6 July at 4 pm)	Closed		
	9 July to 5 August	Closed	Closed		
	6 August to 2 September	9 am - 2 pm	Closed		
Restaurant	2 July to 8 July	11.30 am - 1.30 pm	Closed		
	9 July to 2 September	Closed	Closed		

Leeuwenborch Irregular Opening Hours Summer 2018

	Date	Monday to	Cotundary	Currelau
	Date	Friday	Saturday	Sunday
The Building	9 July to 2 September	7 am - 10.30 pm	8 am - 5.30 pm	Closed
Restaurant / Coffee Bar	9 July to 15 July	9 am - 3 pm	Closed	Closed
	16 July to 19 August	11 am - 1.30 pm	Closed	Closed
	20 August to 26 August	9 am - 3 pm	Closed	Closed
	27 August to 2 September	8 am - 5 pm	Closed	Closed
				Saturday
	Date	Monday to Thursday	Friday	and Sunday
Library	9 July to 15 July	9 am - 5 pm	9 am - 5 pm	Closed
	16 July to 26 August	9 am - 5 pm	Closed	Closed
	27 August to 2 September	9 am - 5 pm	9 am - 5 pm	Closed

fter 6 pm entrance is only possible after registration at the reception desl

WAGENINGEN

Forum Irregular Opening Hours Summer 2018

	Date	Monday to Friday	Saturday and Sunday
The Building	9 July to 5 August	8 am - 8 pm	Closed
The Library	7 July to 2 September	8.30 am - 5.30 pm	Closed
Student Desk	9 July to 12 August	10 am - 12 pm	Closed
IT Service Point	9 July to 12 August	10 am - 12 pm	Closed
WURshop	2 July to 15 July	10 am - 2 pm	Closed
	16 July to 12 August	Closed	Closed
Restaurant	9 July to 26 August	11.30 am - 1.30 pm	Closed
Grand Café	9 July to 26 August	Closed	Closed
Wageningen in'to Languages	9 July to 5 August	9 am - 5 pm	Closed

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

WAGENINGEN UNIVERSITY & RESEARCH

In memorian

Birgitta Clement



Our much-appreciated colleague Birgitta Clement died suddenly at the age of 54 on 4 June. We are finding it hard to grasp this unexpected loss and we are full of disbelief and grief.

Birgitta had worked at the secretariat of Imares, later Wageningen Marine Research, since March 2011. She play a central role in our institute. Besides the work of the secretariat, she was on the works council

of the Animal Sciences Group (ASG), on the WUR council, and chair of the WMR staff association. She was an extremely loyal and committed member of staff. Birgitta brought people together. It was she who took the initiative for shared lunches, and helped organize social events such as table football tournaments at our branch. In her work she was helpful, thought things through with people and offered constructive criticism.

We shall miss Brigitta's valuable contribution to our organization, as well as her team spirit and her loud laugh. On behalf of the management of ASG, we offer our sincere condolences to her mother, brother, and all her family, wishing them strength to bear this great loss.

On behalf of our colleagues at Wageningen Marine Research, Tammo Bult, Jakob Asjes and Jeannette Riensema MT Wageningen Marine Research

In memoriam

Nicolò Scopelliti (1992-2018)



On Wednesday 23 May, our brilliant and dedicated MSc student of Food Technology Nicolò Scopelliti passed away near his parents' home in Italy. Nicolò was born in 1992 and graduated with a BSc in Food Technology from the University of Milan in 2016. Then he decided to pursue his dream and study abroad, in Wageningen. He completed the first year of the Master's programme and had recently been working on his thesis at the Food Quality & Design

group, in collaboration with WFBR. Nicolò had a true passion for Food Technology and he liked to dig deep to understand the mechanisms at work. All those who had the opportunity to work with him in these two years will remember his intense, intelligent gaze. His thesis work was about the quality of dehydrofreezing of mango cubes, and he threw himself into it with great enthusiasm. Even when it became difficult for him over the last few months, when he was trying to cope with the psychological turmoil that troubled him.

In Nicolò we mourn the loss of a good student and friend. A young man who, were it not for his premature death, would have contributed to making the world a better place.

Vincenzo Fogliano, Ruud Verkerk, Erik Esveld, Anke Janssen, Melanie van Berkum

Announcements

STUDENT COUNCIL 2018/2019 -ELECTION RESULT

The results of the SC election were determined and announced on 5 June 2018. The 12 seats will be divided as follows: CSF 2 seats, S&I 3 seats and VeSte 7 seats. The following candidates have been elected as members of the Student Council 2018/2019: Robin Baas and Cito Wakenge for CSF; Joshua Wambugu, Han Bao and Miriam Pater for S&I; Sophie Galema, Bo Briggeman, Leonie Braks, Sybren Zondervan, Ida Sinke, Roos Verstegen and Aniek de Winter for VeSte.

PRESENT YOUR BSC, MSC OR FIRST-YEAR PHD RESEARCH AT THE ELLS SCIENTIFIC STUDENT CONFERENCE

On 9 and 10 November, 350 students from seven European countries will meet on Wageningen Campus for a scientific conference on the theme: 'Life Sciences: looking across disciplines'. You could be one of them! Send in a summary of your research by 30 June. Registration is open for students of all disciplines. For more information and to submit your summary: www.wur.eu/ells2018.

BEYOND CONNECTION - ME &YOU IN THE DYNAMICS OF COLLABORATION: REGISTER NOW

This course, beginning in September, consists of four workshops and four individual coaching sessions: Open up and locate yourself, Dynamics and trust, Network and connect, Project presentation. We focus on the dynamics at play when people, groups or (project) teams meet and connect across disciplines. The trainers are Djura Prins and Cor Meurs. For more information search the intranet for Beyond Connection or email Ann-Marie Ryan at lend.chr@wur.nl.

Agenda

Thursday 28 June

WEES WORKSHOP AND SEMINAR

Dr Chris Templeton (Pacific University, USA) is visiting Wageningen to give a workshop on duetting in wrens and a seminar on alarm calls in chickadees and tits. Workshop: Vocal duet integration and learning in neotropical wrens, Orion C4016, 1.30pm, registration required (nina.bircher@wur.nl). Seminar: Sound the alarm! Anti-predator communication in social flocks of chickadees and tits, Orion C2005, 4pm, open to all! Drinks and discussion afterwards at The Spot. **WEESWAGENINGEN.NL**

Colophon

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

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

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Marc Lamers, Corporate Communications & Marketing Wageningen University & Research



>>TYPICAL DUTCH



Dutch tolerance

I enjoy discussing social and political issues with Dutch friends. But the more I discuss them, the more I feel that Dutch people's tolerance on some social phenomena is nearly incomprehensible.

I admire Dutch people's respect for social diversity very much. Prostitution, drugs and homosexual marriage are all allowed in the Netherlands, which I agree with completely, and think other countries should learn from. However, recently I was astonished by the tolerance of Dutch people on other social issues. One day, I told my Dutch friend that the Dutch government should ban the Second Love commercials. He seemed shocked by what I said. He explained that Second Love, a site for discretely cheating on your partner, is just one of the many kinds of business, like trading or banking, and the government should not intervene. I was shocked by what he said because I think these kinds of commercials can mislead teenagers and undermine the social consensus on monogamy.

Another time, a Dutch friend told me that as far as he was concerned, the Scottish man who taught a dog to perform the Hitler salute should not have been arrested. I said if the man put the video online himself, he crossed a boundary. My friend answered that people should be more tolerant of such jokes because the person who made them had no intention of hurting others. I find this explanation far-fetched.

I realize the reason why we have such divergent views on the same social issues is deeply rooted in the different socio-cultural traditions. Dutch people are extremely, if not unreasonably, cautious about state intervention. They worship freedom, while Chinese people tend to believe society needs regulations. () Jin Zhang, a Chinese PhD candidate in Rural Sociology

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

For my Dutch friend, helping you cheat on your partner is just one of many kinds of business