

WAGENINGEN WORLD

MAGAZINE OF WAGENINGEN UR ABOUT CONTRIBUTING TO THE QUALITY OF LIFE

nr.2 2012



'The city
is hungry'

Madeleine van Mansfeld,
page 30

Reducing salt is possible | Is **Cisgenesis** safe? | **MRI** measures pleasure | From thesis to **pig's toilet**
Saving on muck disposal | Young ideas for **rural depopulation** | Investing in **breakthroughs**



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SALT

We eat too much salt. And 80 percent of it comes from foods we buy. Research shows that salt levels in these products can be reduced but the food industry and supermarkets are dragging their heels.

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IS CISGENESIS SAFE?

Proponents of cisgenesis received support this spring from the European Food Authority. The EU watchdog declared the health risks of cisgenesis crops to be no greater than those of crops produced through classic breeding methods.



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THE CITY IS HUNGRY

Agriculture on an industrial scale is the answer to the food requirements of the world's fast-growing megacities, says Alterra. A Metropolitan Food Cluster combines food production with waste processing.



COLORPHON Wageningen World is the quarterly magazine for associates and alumni of Wageningen UR (University and Research centre) and members of KLV, the Wageningen Alumni Network. A PDF version of the magazine can be found at www.wur.nl/UK/publications/Periodicals. **Publisher** Wageningen UR, Marc Lamers, **Editorial Board** Paul den Besten, Hans Bothe, Ben Geerlings, Wilbert Houweling, Bert Jansen, Jeanette Leenders, Jac Niessen, Judith Pierik, Helene Stafleu, Erik Toussaint, Sil Trass, Delia de Vreeze, Brenda van der Zee. **Editors-in-chief** Gaby van Caull (Editor-in-chief Resource), Pauline Greuell (Corporate Communications Wageningen UR). **Magazine editor** Miranda Bettownville. **Copy editor** Rick Nijland. **Alumni news** Alexandra Branderhorst. **Translation** Clare McGregor, Clare Wilkinson. **Language editor** Clare McGregor. **Art direction and design** Jenny van Driel (Wageningen UR, Communication Services). **Cover picture** Corbis. **Overall design** Hemels Publishers. **Printer** Mediagenta Rotterdam. **ISSN** 2212-9928. **Address** Wageningen Campus, Akkermaalsbos 12, 6708 WB Wageningen, PO Box 409, 6700 AK Wageningen, telephone +31 317 48 40 20, wageningen.world@wur.nl. **Change of address alumni** www.wageningenworldporta.nl. **Change of address associates** (mention code on address label) wageningen.world@wur.nl. **Change of career details** alumni@wur.nl.

The mission of Wageningen UR (University & Research centre) is 'to explore the potential of nature to improve the quality of life'. Wageningen UR includes nine specialist applied research institutes, Wageningen University, and Van Hall Larenstein University of Applied Sciences. These institutions have joined forces to contribute to finding answers to crucial questions related to healthy food and a sustainable living environment. Wageningen UR has a staff of 6,500, 10,000 students, 35,000 alumni and 40 sites, with a turnover of 662 million euros. Institutes of Wageningen UR: Alterra, LEI, Plant Research International, PPO, Wageningen UR Livestock Research, Central Veterinary Institute, Wageningen UR Food & Biobased Research, IMARES and RIKILT.



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PHOTO HARMEN DE JONG

Rio+20: better than nothing

'At the UN conference on sustainable development to be held in Rio de Janeiro at the end of June, science will hardly be in the picture. Science has done its bit during the preparation process; now it is time for some political commitment. Just like all the foregoing mega-conferences, RIO+20 will primarily be a media event in which participants make statements that others barely listen to. The outcome of the conference is largely predetermined. It is easy to be cynical about this but in retrospect the previous environment conference held in Rio 20 years ago was a big success. One of the outcomes, Agenda 21, has become a global motor for grassroots involvement in environmental issues. In the Netherlands, among other countries. By the end of the nineteen nineties any Dutch municipality worth its salt had developed its own approach to efforts such as energy-saving, for example. It is quite an achievement for something decided at such a high level to deliver so much local level inspiration.'

'1992 also saw the drawing up of the Biodiversity treaty and the Climate treaty, which went on to form the basis of the Kyoto Protocol. These were major milestones. To be honest, I do not expect such big steps forward from this year's conference. One of the goals of RIO+20 is to form a global environmental institution with extensive powers comparable to those of the World Trade Organization. That is a good idea but I think many countries will be reluctant to set up such a powerful environmental stronghold.'

'It is not difficult to explain why the prospects this time are bleaker. In 1972 in Stockholm the environmental movement was in its infancy; this was the era of the Club of Rome. In 1992 as well, the zeitgeist was favourable. Those conferences were used to reap the benefits of widespread support. Now all eyes are on the financial crisis and the recession. This does not mean RIO+20 is bound to be a failure. It is good to remind world leaders once again of the importance of the environment and sustainability. It is better than doing nothing.'

Arthur Mol, professor of Environmental Policy at Wageningen University, part of Wageningen UR

NATURE AND RECREATION

Breeding birds don't stop races

Even in the nesting season, the TT circuit at Assen in the north of the Netherlands can continue holding its car and motorcycle races. The roaring motorbikes do not scare off the breeding birds in the adjacent nature area, shows research by Alterra, part of Wageningen UR, and SOVON Bird Research Netherlands. The Witterveld protected nature area is home to several endangered species. The province of Drenthe was only willing to give the go-ahead for a race event if the impact of the noise on the birds was monitored and no significant negative effect on the birds was seen. Monitoring in 2010 and 2011 showed that there were no negative effects. 'It seems that birds will not abandon their brood on account of short-lived noise that only goes on for three days', says René Henkens of Alterra.

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ENTOMOLOGY

Climate wipes out ladybirds



The black ladybird is an increasingly rare sight in the Netherlands. An effect of climate change, claims entomologist Peter de Jong of Wageningen University, part of Wageningen UR, and a Leiden University colleague in the December issue of the journal *Heredity*. The black ladybird was still predominant in the inland areas of the Netherlands in the early 1980s, but has since been overtaken by the red species.

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BIOBASED



PHOTO HOLLANDSE HOOGTE

Plastic recycling could be improved

Recycling plastic is very beneficial to the environment and helps us to use natural resources more sustainably. But Dutch plastic recycling could be much improved, say researchers from Wageningen UR Food & Biobased Research.

The researchers describe in their report *Plastic packaging waste, from collection to spontaneous reuse* how plastic packaging is currently collected, how much this costs and how the system could be improved. Their aim is to contribute to the debate on the recycling of plastics.

Dutch municipal councils receive a relatively high price per ton of collected waste material. But this high price means the collection services have very little incentive to increase their efficiency. In Germany and Belgium the costs of collection are at least 50 percent lower, the researchers show. An ideal recycling system covers its own costs, as is the case with the collection of waste paper and metals. It will take a con-

certed effort by all the players in the plastic packaging chain (including packers, municipalities, waste-sorting companies, upgraders and end-users) to make plastic recycling cost-covering. Efforts need to be focused on goals such as increasing public participation in plastic waste collection, helping municipalities to increase efficiency, improving the sorting process and changing the design of packaging to make it easier to separate and collect the plastic. Lastly, the costs of plastic collection could be reduced by 10 percent if the bottles on which there is currently still a deposit were collected with the rest of the plastic packaging.

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ANIMAL AND PUBLIC HEALTH

Resistance to Schmallenberg virus

The Central Veterinary Institute (CVI), part of Wageningen UR, expects a fall over the next year in the numbers of misshapen calves affected by the Schmallenberg virus.

This new virus causes congenital abnormalities in calves, lambs and goats. The virus is probably transmitted from one animal to the next by biting insects such as midges.

The disease was first noticed in lambs in the Netherlands in December 2011. The lambs were born with deformities such as a twisted neck, water on the brain and stiff joints. The affected lambs are not viable and are often stillborn. The ewes themselves show no symptoms of the disease. In February the CVI developed a test for detecting the Schmallenberg virus in animals. Tests among Dutch cows have shown that 70 percent have been in contact with the virus. So the fact that only a few calves on each farm are born deformed is good news.

'Apparently the virus cannot easily get into the foetus. Either that or it does not always cause symptoms', says Wim van der Poel of the CVI.

Because so many animals have built up resistance, it is expected that the number of deformed calves will go down in the next year. The

situation for sheep is different, however. On infected sheep farms half the lambs can be deformed. Since mid-March, several European research institutes have reported finding the Schmallenberg virus in midges. The CVI also examined midges caught earlier for the virus, in order to find out whether the virus is being spread by these insects.

German researchers do not expect to have a vaccine against the Schmallenberg virus before 2014. Nor is it clear whether animals have immunity to the disease once they have been infected with it.

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SUSTAINABLE CHAIN



PHOTO HOLLANDSE HOOGTE

Cutting food waste

Halving food waste by 2025: this is the goal set by Wageningen UR Food & Biobased Research together with FUSIONS, a European consortium of universities, consumer organizations and companies from 13 countries. The alliance includes agricultural economics institute LEI, part of Wageningen UR. The European Commissions has pledged four million euros for research on more efficient use of natural resources and prevention of food waste in the market chain. The world food organization FAO estimates that about 76 kilos of food is wasted per person per year in Europe.

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TECHNOLOGY

Investing in chemical research

Wageningen University, part of Wageningen UR, and five other Dutch knowledge institutions have been allocated 18.5 million euros by the ministry of Education, Culture and Science to purchase a high resolution spectrometer for chemical research. The 1.2 gigahertz NMR spectrometer, to be located in Utrecht, opens up possibilities for new research methods. Among other things, this could contribute to improving crop yields and food quality.

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NUTRITION AND BREEDING

Panel exposes stinking meat



Researchers at Wageningen UR Livestock Research have developed a system for detecting 'boar taint' in pork. Meat with boar taint stinks when it is roasted, a phenomenon associated with boars that have not been castrated. For reasons of animal welfare, castrating pigs will be banned in the Netherlands from 2015. European researchers were able to track down more than half the cases of boar taint via two chemical substances in the pigs' fat. But they scored 100 percent when they made use of a panel of human taint detectors. In turn, three people assessed meat for the odour, rejecting meat with even a slightly strange smell. Using this 'Human Nose Score' method, pig-breeding organization Topigs has discovered that boar taint is largely genetically determined. The organization can now supply boars with which the risk of boar taint in the offspring's meat is 40 percent lower.

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NUTRITION AND HEALTH

Extra protein lowers blood pressure

A raised protein intake lowers blood pressure in people with overweight, concluded researchers from Wageningen UR and colleagues from the universities of Groningen and Maastricht in the February edition of *The American Journal of Clinical Nutrition*. This drop was observed in test subjects who were given a high protein drink during a meal, and was not present in a control group who were given a carbohydrate drink. It is not yet understood why the blood pressure of the first group went down.

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HOUSEHOLD ECONOMICS

Who does the most housework?

Dutch men and women have very different ideas about how much of the housework and household financial management they do.

This conclusion was drawn by Gerri Antonides, professor of the Economics of Consumers and Households at Wageningen University, part of Wageningen UR, from answers to a survey of about 4000 couples. The survey was conducted by the Nibud, an organization offering advice on family finances, and the questions were about how often the respondents and their partners carried out tasks such as cooking, ironing and cleaning. Men think they do 79 percent of the household work, while women estimate the men's share of the work at only 29 percent. Men also reckon that they usually do the financial management for the household, yet

women make the same claim for themselves. Antonides does not know which of the domestic partner is right. He was chiefly interested in which factors determined the division of tasks in households. How much people do around the house seems to depend not on what they earn but how they come out of domestic negotiations. 'Men do not do less around the house if they earn more. In fact, if his wife has been through higher education or has a job too, the man tends to do more. In such cases the division of labour in the home tends to be renegotiated. Households are based on the negotiation model'. Info: gerrit.antonides@wur.nl



PHOTO HOLLANDSE HOOGTE

ANIMAL WELFARE

Stable analysis

Wageningen UR Livestock Research has analysed the sustainability of stables for horses. The researchers describe and compare traditional individual stables both with and without access to a paddock, shared stables, two existing new shared stable systems and one system that is still

under development. A brochure entitled *Comparing horse stables: out of the box* has been published for equine entrepreneurs with building or renovation plans and for policymakers who license equine businesses.

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BEHAVIOURAL RESEARCH



PHOTO GUY ACKERMANS

Virtual supermarket

Wageningen University, part of Wageningen UR, has a complete supermarket at its disposal for research on shopping behaviour. But there was no need to rent a building: the supermarket is a digital one.

Test subjects enter the shop through three large computer screens and use the arrow keys on the keyboard to 'walk' down the aisles lined with shelves full of three-dimensional products. The researchers, meanwhile, can follow closely how the shoppers go about working through their shopping lists. 'We can see how long they

stand still at a particular spot, which product labels they look at and in what order', says Erica van Herpen of the Market Research and Consumer behaviour chair group. This generates a wealth of information that should help to clarify how the layout of a shop affects shoppers' behaviour. The first study conducted using the virtual supermarket looked at ways in which consumers can be gently 'nudged' in the direction of more sustainable or healthier products. The virtual supermarket was developed by the Wageningen company Green Dino.

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ECOLOGY

Vegetation reveals soil quality

The poor quality of the vegetation in many nature areas is often a direct result of poor soil quality. But identifying the problem by analysing soil samples is an expensive business. Alterra, part of Wageningen UR, has developed a cheaper alternative method.

With this new method, the conditions in the soil are calculated using data on what the veg-

eration absorbs. This estimate of soil quality is then compared with the demands made on the soil by the kind of habitat or the management approach in use. This comparison can be used to predict the shortfalls and surpluses. 'This way a manager can quickly and easily find out whether the objectives set for the nature area are feasible, what the problems are and how they could be addressed', says researcher Wieger Wamelijk of Alterra.

After a pilot project in the Dutch province of Gelderland, the indicator system has now

CONSUMER BEHAVIOUR

People like to see origin on label

Dutch consumers like to be able to read on the packet where a food product comes from, especially in the case of fresh produce. But taste, price and health benefits are still the main factors influencing people's decision whether to purchase something. These are the findings of a study by agricultural economics institute LEI, part of Wageningen UR. It was also noted that consumers who check the origin of products often also show concern about their impact on animal welfare and the environment.

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been made available to the whole of the Netherlands, and will soon be available abroad as well. Info: wieger.wamelink@wur.nl

Climate label helps a bit

Simply reporting the carbon dioxide emissions caused to produce a food item has a limited impact on consumer choices, shows research conducted in the Restaurant of the Future by Food & Biobased Research and the Environmental Policy chair group at Wageningen UR. But a label that uses colour coding to indicate the size of the product's CO₂ footprint relative to that of similar products did – in combination with additional information – lead to slightly more eco-friendly consumer choices than the figures alone. Info: anke.janssen@wur.nl



PHOTO MARIUS FISKUM

Fresh fish on your mobile

The iPhone application for assessing the freshness of salmon, cod and plaice has been expanded with ten other kinds of fish including herrings, sole and three kinds of shrimp. The app – How fresh is your fish? – guides the user in systematically assessing the fish by smell, texture and the appearance of its eyes, skin and gills. It then concludes how many days the fish will stay fresh if kept on ice.

The system is based on a standard quality index and was initially developed for professional users. It can be used by consumers, however, as long as the fish have been gutted, washed and stored on ice without further processing. The improved version is also able to store and send results and comments. The free app, which is available in 11 languages, was developed by IMARES, part of Wageningen UR. Info: joop.luten@wur.nl

Volunteers help Tick Radar

Anyone planning an excursion into the Dutch countryside can consult the website Tekenradar.nl to find out what risk they run of being bitten by a tick. Thanks to an army of volunteers who go out tick-catching all over the country.

The risk forecast is made at Wageningen University, part of Wageningen UR, on the basis of the number of ticks caught by the volunteers. Since 2006 they have been monitoring tick activity for the Nature Calendar once a month at 15 locations. Their catches provide a picture of the tick population density and the percentage and distribution of ticks infected with *Borrelia* bacteria. A bite from an infected tick can cause Lyme disease.

Two volunteers who have been working for this project from the start are Diana Zwaan from Leiden and Diny ten Brink from Elten, just across the German border to the east of the Netherlands. 'I agreed to do it before I even knew how to go about catching them. I thought it would be exciting', says Ten Brink. Every month without fail she sets off with a small white sheet to two locations in the Bergher forest in Montferland nature reserve. There she repeatedly drags the sheet over 100 metres of ground, ferns and

blueberries bushes. Then it's a question of kneeling down with a pair of tweezers to pull off all the larvae, nymphs and full-grown ticks she has caught and put them in a little bottle full of alcohol. Diny Zwaan spends about two and a half hours per month doing the same thing in the dunes on the Dutch coast near The Hague. 'It has become a kind of hobby, an excuse to go for a leisurely walk and look around. You chat to other walkers too, who wonder what you are doing and often have specific questions about ticks.' Neither of the ladies is afraid of a tick bite. 'You just check yourself thoroughly when you get home', they say.

The researchers hope that the tick forecasts on Tekenradar.nl will make people more aware of the presence of ticks and the need to take precautions after visiting a nature reserve, park or garden. On the website they can also report any tick bites and the red circular rash that can follow them.

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PHOTO THEO TANGELDER

ENVIRONMENT AND WELLBEING



BIODIVERSITY

Climate change reduces diversity

Plant and animal species that are driven by climate change to find new habitats quickly forfeit genetic diversity. This smaller gene pool makes the species more vulnerable to diseases. Fragmented landscapes and the loss of nature reserves accelerate the loss of genetic variety. These findings came out of PhD research by Marleen Cobben at Wageningen University. Cobben studied the middle pied woodpecker, a model species that has become increasingly common in the Netherlands in recent years. Cobben shows that it is especially the populations on the northern borders of the distribution area that are moving further north. These populations are less genetically diverse than those in the centre of the distribution area. This way the migrating northern populations become even more genetically impoverished.

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City folk go away more

Dutch people who have little access to green space for walking or cycling seem to go away more on holiday.

This conclusion was reached by Sjerp de Vries of Alterra, part of Wageningen UR, in an article published jointly with colleagues from the University of Groningen and the Netherlands Environmental Assessment Agency in the April edition of the journal *Landscape and Urban Planning*.

It is particularly in the conurbation in the west of the country that people feel the lack of outdoor recreation facilities. They seem to seek to make up for living in the

concrete jungle by taking more holidays: annually they spend an average of 20 percent more time (four nights) away on holiday than people who live in a greener environment. The total difference is 20 million overnight stays. These extra outings can be interpreted, according to the researchers, as a response to a lack of well-being resulting from an excessively dreary environment.

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GREENHOUSE HORTICULTURE

Wageningen UR's high-tech exhibits at Floriade



Wageningen UR Greenhouse Horticulture is present at the Floriade international horticultural exhibition this year in Venlo, the Netherlands. Together with research organization TNO and several greenhouse system suppliers, the Wageningen researchers form part of an Innovation cluster in the House of Taste. A mini-greenhouse demonstrates to a wide audi-

ence what high-tech sustainable greenhouse horticulture looks like. In the Dutch state pavilion My Green World, researchers use a camera system called the crop reporter to show how photosynthesis works in plants. Wageningen UR is also involved in a number of seminars at the Floriade. The world horticultural exhibition goes on until 7 October. Info: eric.poot@wur.nl

PHOTO FOTO NATURA





A pinch
less salt

We eat too much salt, which is bad for our hearts and blood vessels. But it is hard to avoid salt when 80 percent of it comes from purchased foods. Salt in these products can be reduced – at no cost to the flavour – but producers and supermarkets are dragging their heels.

TEXT ASTRID SMIT PHOTOGRAPHY SHUTTERSTOCK ILLUSTRATION SCHWANDT INFOGRAPHICS

When we pop into the supermarket for a pizza or a quiche, few of us realize that we are not just treating ourselves to an easy, tasty meal, but also to a large helping of salt. A 350 gram portion of these foods contains no less than 5 grams of salt, according to the Dutch Heart Foundation's Salt Counter. Whereas we should be consuming no more than 6 grams of salt per day for a healthy cardiovascular system. Nor is it just from ready meals that we get too much salt into our systems. Our staple foods are just as much to blame. A slice of bread with two slices of mature cheese on it? One and a half grams of salt. A piece of sausage with your mashed potato? About two grams. Take a cup of clear soup at the end of the day and you clock up between two and three grams. Hardly surprising, then, that 85 percent of the Dutch population exceed the 6 gram norm every single day. Men by an average of 4 grams and women by an average of 1.5 grams, we learned from Salt Consumption of Dutch Children and Adults, a study published in February by the national public health and environment institute RIVM. Children eat too much salt as well. They should not eat more than 5 grams a day, yet boys eat 8.3 and girls 6.8 grams.

It is not easy to avoid all this salt, especially now that we eat more and more ready meals. Who bothers to soak and boil their own beans anymore? Who makes their own pasta sauce from fresh tomatoes? Most people find these ingredients on the supermarket shelves in tins and jars – and unfortunately they contain more than a pinch of salt. This is how more than 80 percent of the total salt intake in the Netherlands comes from purchased foods such as bread, cheese, meat, sauces and soups (see chart). The other 20 percent is added in the kitchen or at the table.

CARDIOVASCULAR DISEASE

And this does us no good at all. Because every gram of salt we eat over and above the 6 gram limit causes our blood pressure to go up by one mmHg, according to

several large epidemiological and experimental studies. 'That link has been conclusively proven', says nutrition expert Marianne Geleijnse of the department of Human Nutrition at Wageningen University, part of Wageningen UR. And every additional mmHg represents a raised risk of cardiovascular disease, stroke and ultimately, death. 'If, for example, the blood pressure of the whole population of the Netherlands were to go down by five mmHg, that would probably reduce the number of deaths from strokes by 14 percent and the number of deaths from heart attacks by 10 percent', says Geleijnse.

Clearly, cutting down on salt could deliver big health benefits in the Netherlands. But how can this be done? After all, consumers really like their salt. So for the food industry and the small and medium-sized food retailers such as bakers, butchers and cheese shops, there is a big risk of losing customers if their products become less salty. And not only does salt add flavour to the product; it often also alters its structure and lengthens its shelf life. So low-salt bread dough is stickier, for example, while low-salt processed meats go off faster. To make up for a lower salt content, we will therefore need new recipes for various products. In the jargon of the industry, they will have to be 'reformulated'. Large companies such as Unilever can do this in their own research laboratories, but small and medium-sized companies do not have such facilities at their disposal. So the ministries of Public Health and of Economic Affairs, Agriculture & Innovation have come to their rescue. Wageningen UR, TNO and the RIVM were asked in 2008 to research the options for small and medium-sized enterprises in an umbrella project called 'Reformulating foods'. Wageningen UR's task is to establish how big a reduction in salt levels the consumer can accept, TNO is looking into the consequences of low salt levels for the production and quality of foods, >

and the RIVM is calculating the health benefits to be gained from reformulation. The focus of the project is on bread, savoury sandwich fillings (processed meats and salad spreads), soup and snacks.

BAKERS, CATERERS AND RETAILERS

The research on bread is already in the final stages. In April the Food & Nutrition Delta (FND) organized a workshop in which the researchers presented their initial results to stakeholders: bakers, caterers and retailers. One of the conclusions was that there is no cause to fear that consumers will buy less bread if it contains less salt. A study led by Anke Janssen of Wageningen UR Food & Biobased Research showed that such a reduction went almost unnoticed by consumers. Janssen, a consumer scientist, invited groups of students for breakfast at the Restaurant of the Future in Wageningen four weeks running. One group was given bread containing standard amounts of salt, another was given low-salt bread and a third was given low-salt bread with added flavourings.

In the second group on low-salt bread, the amount of salt went down a little every week until it had been halved. Only when that point had been reached did the students start to eat less of the bread. ‘Laboratory research shows that people can easily taste the difference between salty and less salty food. But in a realistic context such as the Restaurant of the Future, they just go on eating because they are not so focused on what they are eating. And under those conditions it seems you can cut the amount of salt drastically’, says Janssen. And that is not all: the taste preferences of the participants on low-salt bread seemed to change over the course of the month. A taste test showed that they actually came to prefer low-salt bread. In this study, which was published in *The Journal of Nutrition* at the end of last year, the amount of salt in the bread flour was reduced from 1.8 to 0.9 percent. This reduction does not pose many technical problems, say TNO business development managers Maurits Burgering and Joost Blankestijn. Together with their colleague Martijn Noort, they researched the texture of the bread in

which salt levels had been reduced by this amount. ‘Dough becomes stickier when it contains less salt, and it rises faster and in a less controlled way. The baker loses control over the production process so that the quality of the bread is less consistent’, says Burgering. These effects are negligible above a salt level of 1.5 percent, but become quite noticeable below this level. The solution is at hand though, says Burgering. ‘It’s a question of adding the right enzymes, which can have the same effect on the baking process as salt.’ Bakers can also compensate for the loss of flavour by adding yeast extract or replacing the sodium from salt with potassium, says Blankestijn. Potassium is healthier too, as it lowers blood pressure (see box). But potassium salt can only be used to replace 30 percent of the sodium salt, because it is fairly bitter. It is also more expensive. Its use would therefore raise the price of bread somewhat and call for a change in the baking process – although only in minor ways, according to the TNO researchers.

NO OBJECTIONS FROM CONSUMERS

The health benefits of reducing the amount of salt in bread are great. Bread accounts for one quarter of our total salt intake. Halving the amount of salt in bread – from 1.8 to 0.9 percent – would significantly reduce the number of patients and deaths per year, says Joop van Raaij, researcher at the RIVM and overall coordinator of the Reformulating Foods project. Fortunately, bakers have already risen to this challenge, says Van Raaij. In 2009, bakers cut the amount of salt in bread flour by 0.2 percent, from 2.0 to 1.8. And they managed this without any objections from consumers, who did not notice anything. Nor did the salt reduction create many problems for the bakers themselves. The target now is 1.5 percent by 2013. ‘Bakers are making a big effort to reduce salt levels’, says Van Raaij. ‘That was clear when we presented our research results too. I was impressed by their willingness to collaborate. One question they quite understandably asked was: “What can we expect from the other sectors? Surely it doesn’t all have to come from our side?”’ And indeed, that is not the idea, although you can achieve a lot by reducing the amount of salt in bread. ‘If you are aiming to cut down on salt you have to do it across the board in the food sector. Otherwise people don’t get used to low-salt products and they will go on adding salt to their food or stop buying low-salt products’, says Van Raaij. According to his calculations, if the other food sectors collaborate as well, a reduction in salt intake of 5 grams per person day should be possible. >

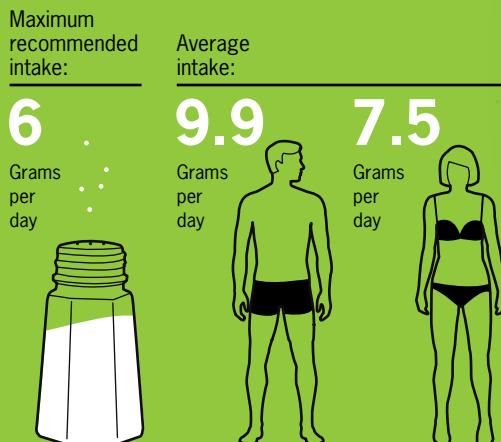
**‘Legislation on salt
would be the best thing
all round’**

FROM SALT TO CARDIOVASCULAR DISEASE

A high salt intake correlates with high blood pressure and elevated risks of cardiovascular diseases.

Too salty

85 percent of Dutch people eat more than the recommended amount of salt.

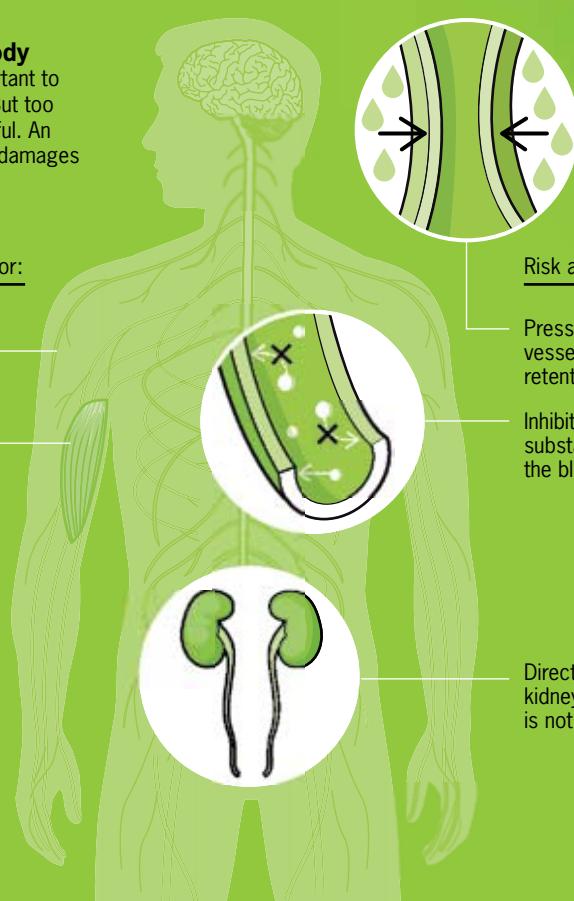


Salt and the body

Salt is vitally important to the human body. But too much of it is harmful. An excess of sodium damages the body.

Salt is necessary for:

- Stimulating the nerves
- Contracting the muscles
- Regulating fluid levels
- Transporting nutrients



Risk associated with too much salt:

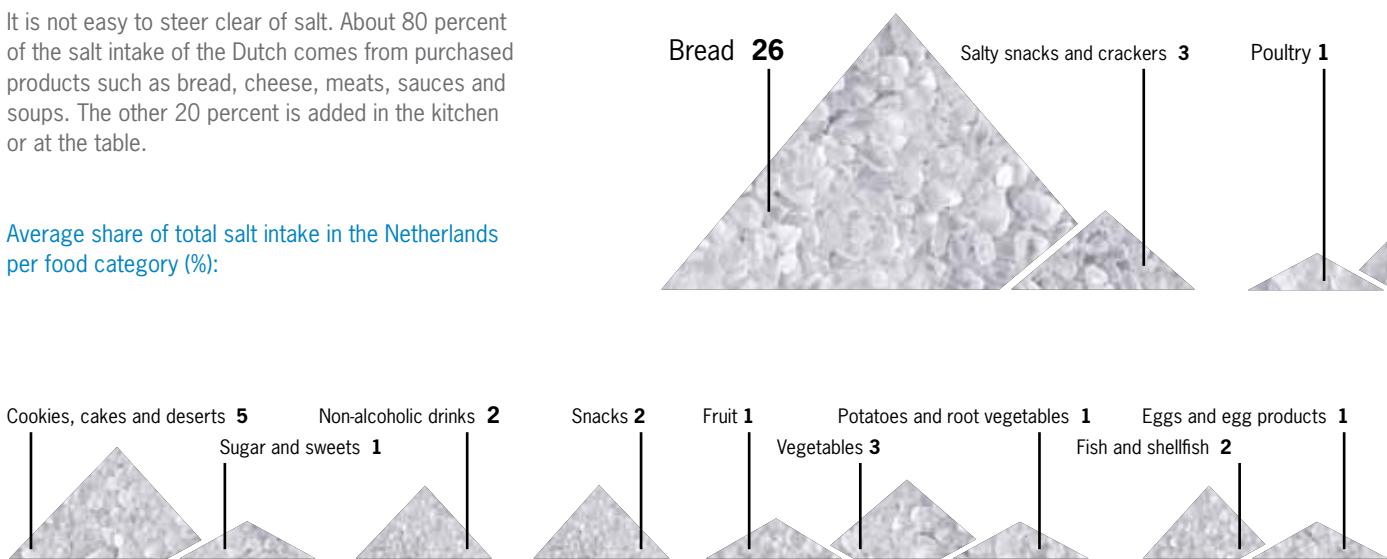
- Pressure on the blood vessels due to fluid retention.
- Inhibiting the release of substances that expand the blood vessels.

Direct damage to kidneys, by what route is not established.

SOURCES OF SALT

It is not easy to steer clear of salt. About 80 percent of the salt intake of the Dutch comes from purchased products such as bread, cheese, meats, sauces and soups. The other 20 percent is added in the kitchen or at the table.

Average share of total salt intake in the Netherlands per food category (%):



Source: RIVM 2012

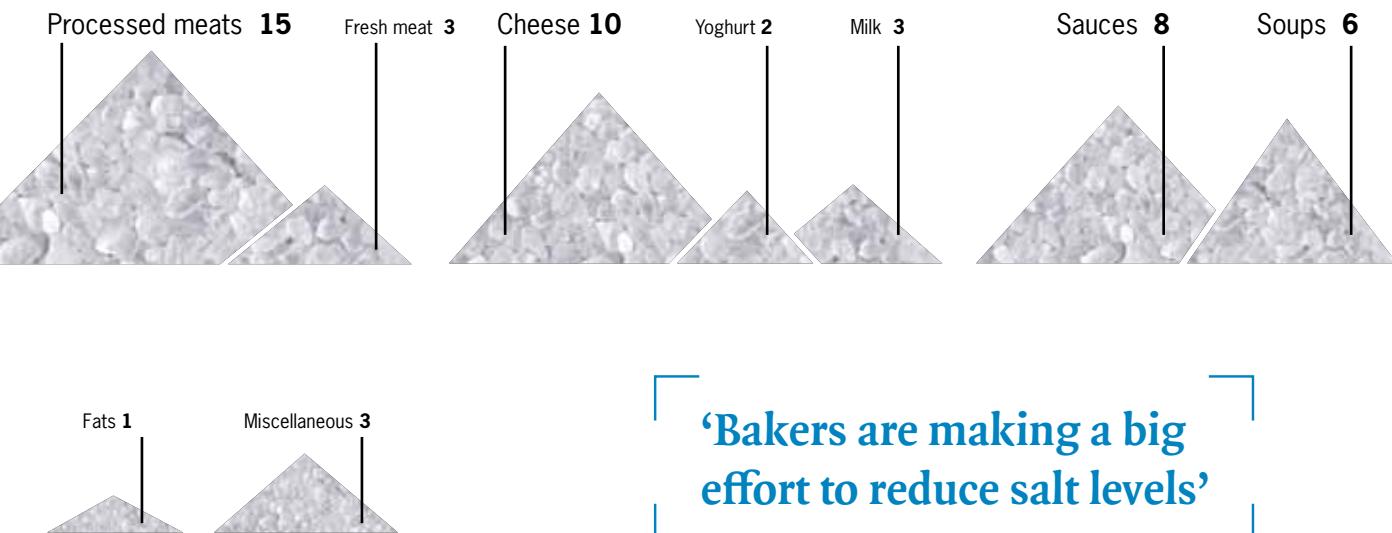
So the motto seems to be: full steam ahead, it's all in a good cause. And if the bakers can do it, other food sectors must be able to follow suit, surely? But apparently it is not as easy as that. The salt reduction in bread achieved so far was a relatively easy target, says Van Raaij. Taking it a step further will not be quite so easy and will cost money – at least in the long run. And this will certainly be the case for other food products.

Before salt levels in sausages, cheese or soups can be reduced, the production processes have to be changed and other ingredients added, making the products more expensive. The fact is that salt is a very cheap flavour enhancer. So who is going to bear the extra costs? And who is going to make the first move? The negotiations that have gone on between the Federation of Dutch Food Producers (FNLI) and its members illustrate the difficulties. In the first phase of its 'Task Force Salt in Food Products', the federation aimed at a reduction of 12 percent between the end of 2008 and spring 2010. They came close, achieving a 10 percent reduction. In the second phase, the federation initially aimed for 20 to 30 percent but later changed its mind. It has now been agreed that every branch of the food industry will set its own targets for 2015, a move that has infuriated the Consumer Association, which has been campaigning for less salt in Dutch food for years. Minister Schippers of Public Health is none too happy with this result, either. If the food industry does not make enough progress, she threatened in a memo to parliament at the beginning of March, she will order a

study into the feasibility of imposing salt reductions in food through legislation. Unilever does not wish to comment on the idea of legislation at present, but says that it is making every effort to cut down on salt in its products. At the end of April Unilever published details of the progress made on its Sustainable Living Plan. In 2011, salt levels in 80 percent of its global products were reduced to levels that would mean consumers would not eat more than 6 grams of salt per day. For example, salt levels in Conimex dried food mixes went down by about 20 percent in 2011, the salt in Knorr World Dishes was cut by 16 percent and Unilever launched two kinds of wholemeal bread with 40 percent less salt than standard wholemeal bread.

THE NEXT HURDLE

Reaching a consensus in their own ranks is not the only obstacle facing food producers in their efforts to reduce salt. The next hurdle is to get the new and usually slightly more expensive products onto the supermarket shelves. Retailers want to be able to sell their goods as cheaply as possible and certainly do not welcome a price rise caused by a reduction in salt. 'I know several companies that can already deliver methods of reducing salt in food', says Blankestijn of TNO. 'But the retailers are not prepared to foot the bill for them.' In a follow-up project, TNO, Wageningen UR Food & Biobased Research, various partners from the industry and a big retailer will look into ways of clearing this hurdle. How do you persuade all the stakeholders –



'Bakers are making a big effort to reduce salt levels'

ILLUSTRATION JENNY VAN DRIEL

producer, retailer and consumer – to invest in salt reduction? 'One of the things we want to study is how much leeway you have in the pricing. For example, what is the effect of a salt logo? Perhaps the consumer would be quite prepared to pay a bit more for a low-salt product. If that is the case, it will be easier to convince the retailer too', says Blankestein.

According to Hans van Trijp, professor of Marketing and Consumer Behaviour at Wageningen University, part of Wageningen UR, a label stating the amount of salt in a product would be a great idea. It would tell consumers where they stand and make them more aware of the amount of salt in foods. But a salt logo is certainly no guarantee that a product will sell better. 'Ten years ago we thought a health logo was an effective sales move. But recent Scandinavian research shows that this is not necessarily the case, and that it can sometimes even dent the popularity of a product. Consumers persistently ignore health logos, with the exception of one small and specific group of people who are either already ill or are exceptionally health conscious.' Most consumers are mainly concerned with short-term gains, says Van Trijp. And they do not include health gains.

LEGISLATION

For this reason you should not leave health to the mercy of the free market, says Van Trijp: you need to legislate for it, at least in part. 'Companies are out for sales. They try to make their products match the wishes and

SODIUM OR POTASSIUM

Sodium in salt can partially be replaced with potassium. Potassium lowers blood pressure and there is also evidence that it stimulates the release in the blood vessels of nitric oxide, which widens the vessels – in contrast to sodium, which causes them to narrow. Nowadays there are brands on sale which combine sodium and potassium salt.

The department of Human Nutrition at Wageningen University, part of Wageningen UR, is currently conducting a double-blind study of the effects of potassium and sodium salts on the metabolism of people with slightly raised blood pressure. (www.kana.nu).

cravings of their consumers as closely as possible. And since we have a preference – whether inborn or conditioned – for sweetness, saltiness and fattiness, their products tend to be sweet, salty and fatty.' So Van Trijp would have no objection to maximum salt levels being laid down for foods. 'I think legislation on salt would be the best thing all round, and having done that you can then let the market do its work.'

But we have not reached this stage yet. For the time being consumers will have to rely on their own common sense, wielding the salt cellar more sparingly and reading product labels more carefully. Foregoing their time-honoured 'bangers and mash' in favour of a piece of normally seasoned chicken – which delivers 20 times less salt than a sausage. And is quite tasty, too. ■

This year's Food4You festival in October will focus on salt.

Spreading more muck

Dairy farmers who use a calculation programme called BEX, developed by Wageningen UR, can spread more muck on their land. That saves them thousands of euros per year.

TEXT MARION DE BOO PHOTOGRAPHY THEO TANGELDER



		7	175
3-fractie (%)	2,6	160-165	
straat	154	170-	
Ruw eiwit	166	140	
Ruw eiwit totaal	61	58	
Oplosbr.ruw eiwit(%)	38		
Ruw vet	254		
Ruwe celstof	119	206	

Experts from Wageningen and from LTO Netherlands collaborated on the development of a calculation programme called BEX which helps dairy farmers keep levels of nitrate and phosphate in manure their cows produce to a minimum. The calculation programme shows exactly how much nitrogen and phosphate a cow has ingested through its feed, and how much it excretes in its dung.

'BEX gives you an insight into the mineral flow on your farm', says dairy farmer Bart van der Hoog, from the Dutch village of Enspijk. He was among the first to adopt the programme. 'Every month we calculate precisely the right rations for the cows and we have every batch of silage analysed.' This generates quite some extra work but also considerable savings because farms that make efficient use of minerals by precisely dosing their cows' feed produce manure containing mineral levels below the national average. And BEX users are then allowed to calculate their own farm's actual manure production.

'The manure policy is based on standard norms but the figures from individual farms can deviate from those considerably', says agrosystems expert Fran Aarts of Plant Research International, part of Wageningen UR. He coordinates a project called 'Cows and Opportunities' which instigated the development of BEX back in 2006. Now about half the dairy farmers in the Netherlands make use of it.

STRONG EVIDENCE

'If a dairy farmer can prove that his own business management scores above the average on environmental friendliness, he is allowed to spread more muck on his own farm', explains Aarts. 'But then you do have to have strong evidence, with proper laboratory analyses. In BEX we have developed a verifiable, checkable system. Some farmers pay as much as 15 euros per cubic metre to dispose of manure, so the savings made by using BEX quickly mount up.'

Van der Hoog from Enspijk farms together

with his parents and keeps 125 milking cows and 90 calves on 66 hectares of land. 'We spread all the muck on our own land. Without BEX, standard calculation tables would tell us that we have about 8 hectares too little space for our muck. That would mean having to dispose of about 400 cubic metres per year.' ■

**'Without BEX
we would have to
dispose of 400 cubic
metres of manure
per year'**



Cisgenesis

as safe or as risky as classic breeding?

The advocates of cisgenesis won a victory in Brussels in February. The food watchdog EFSA declared the technique for building species-specific resistance genes into crops as safe as classic breeding techniques. Opponents of the technique are not convinced.

TEXT KORNÉ VERSLUIS ILLUSTRATION IEN VAN LAANEN

Giving an apple genes from a bacterium or from an octopus under laboratory conditions is genetic modification, but using the same technique to give an apple a gene from a wild apple is something else entirely, argue many plant breeders in Wageningen. Plant breeder Henk Schouten came up with a term for tinkering with species-specific genes ten years ago: cisgenesis. The opposite of transgenesis. Earlier this spring, the advocates of cisgenesis received the support of the EFSA, the European Food Safety Authority, when it declared that cisgenesis crops carry no more health risks than crops developed using classic plant breeding methods. The EFSA reached this conclusion after a study of the genetic chaos that results from normal plant reproduction. Which is not inconsiderable. Besides the slip-ups which cause errors to creep into the DNA, there are also things called transposons – ‘jumping’ bits of DNA that can settle randomly somewhere in the genetic material, switching off genes as they do so. The white grape is the product of a transposon which switched off a gene for producing the pigment in purple grapes. By equally natural processes, pieces of DNA can disappear, acci-

dently get doubled or turn up in descendants’ DNA in the opposite order.

NO NEW DANGERS

Plant breeders have been exploiting this naturally occurring variety for centuries, as well as developing an arsenal of additional techniques such as using radiation or the changes to DNA that can be brought about by cultivating tissue cells. And all these techniques are at least as unpredictable as cisgenesis, says the EFSA. There is therefore no reason to anticipate new dangers justifying extra safety measures for cисgene crops.

Cisgenesis is a Wageningen baby. Plant breeders Henk Schouten of Plant Research International and Evert Jacobsen of Wageningen University, both parts of Wageningen UR, have been campaigning since 2004 to get the technique recognized as safe and cисgene crops exempted from the regulations for genetic modification. The EFSA report is grist to their mill, says Euro MP Peter van Dalen of the Christian Union. His party is the strongest supporter of cisgenesis in the Netherlands, and indeed in Europe.

‘We see big advantages. It enables you to make crops





resistant to diseases quickly, whereas doing that by traditional breeding methods sometimes takes decades. We consider it to be fundamentally different to transgenesis because no exogenous DNA is introduced. You are still within the range of changes to DNA that you can achieve with ordinary cross-breeding, and that puts it within the natural order of creation. To us, this makes all the difference compared with transgenesis, which we are against', explains Van Dalen.

Recognition of cisgenesis as a safe technique is very important to the Netherlands economically, in Van Dalen's view: 'We are a big exporter of vegetables and fruit and we have a strong plant breeding sector, which stands to benefit from cisgenesis because it would enable it to stay competitive on the world market.'

A positive verdict from the EFSA was a condition set by the European Commission for a decision on cisgenesis. Van Dalen intends to urge the Commission to reach a decision as soon as possible. Once it has done so, ratification by the European Parliament is still required. 'I would expect the parties of the centre and of the right to be positive in their attitude to cisgenesis. It is especially the greens and the socialists who are wary of everything that has anything to do with genetic modification. But cisgenesis is not the same thing as transgenesis; I will try to explain that too. It is not always easy. It is an idea that you need to take some time to get to grips with.'

RELATED TO TRANSGENESIS

Linda Coenen of the Aseed campaign does not think much of the distinction drawn between cisgenesis and transgenesis. 'To us they are both forms of genetic manipulation. Cisgenesis is more closely related to transgenesis than it is to traditional breeding methods. In both cisgenesis and transgenesis you do not know exactly what the consequences of introducing a new gene will be.'

Coenen is not impressed by the EFSA report either. 'Look who they asked for advice: Anton Haverkort from Wageningen, someone they knew to be in favour. Why not Edith Lammerts van Bueren, who is known to be far more critical of the technique? By asking the >





PHOTO HOLLANDSE HOOGTE

PETER VAN DALEN
Christian Union Euro MP

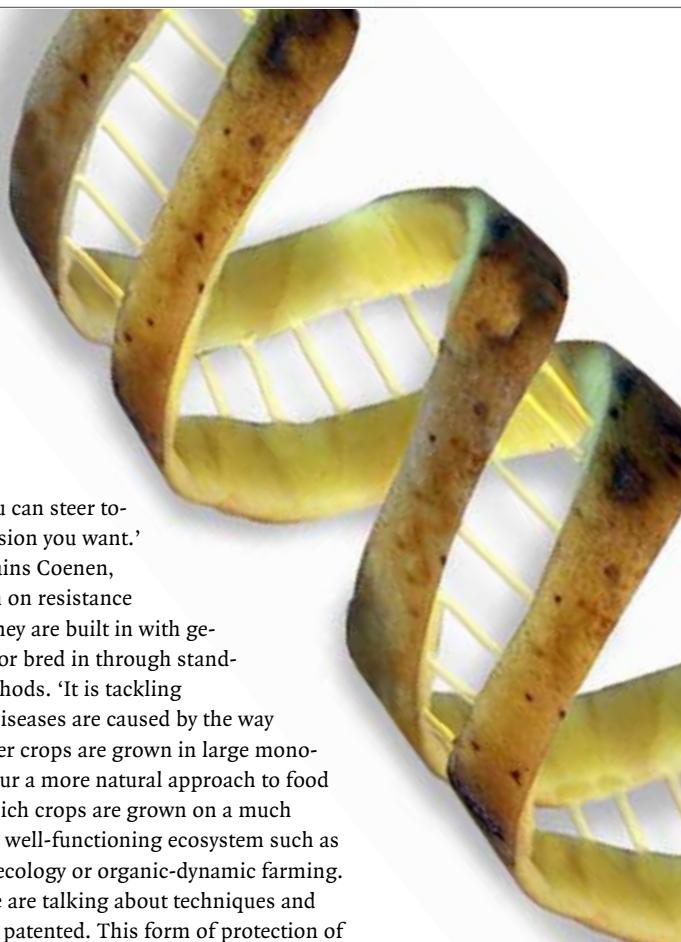
'Cisgenesis is within the natural order of creation'



PHOTO GUY ACKERMANS

EDITH LAMMERTS VAN BUEREN
Extraordinary professor of organic
Plant Breeding, Wageningen
University

'A plant is not a Lego set to build whatever you want with'



right advisors you can steer towards the conclusion you want.' In any case, explains Coenen, Aseed is not keen on resistance genes, whether they are built in with genetic techniques or bred in through standard breeding methods. 'It is tackling symptoms. The diseases are caused by the way potatoes and other crops are grown in large monocultures. We favour a more natural approach to food production in which crops are grown on a much smaller scale in a well-functioning ecosystem such as you find in agro-ecology or organic-dynamic farming. What is more, we are talking about techniques and products that get patented. This form of protection of intellectual property leads to a concentration of power in the hands of big companies such as Monsanto and BASF. The smaller breeding companies in the Netherlands will go under.'

FEAR-MONGERING

Evert Jacobsen, professor of Plant Breeding, stands his ground. 'Fear-mongering' is what he calls the discussion about the possible dangers of introducing new genes. 'Opponents of cisgenesis always seem to forget that more than 2000 tons of pesticides are sprayed on Dutch potatoes every year. You can only leave that out of your calculations if you believe that it is risk-free.' It will be good for the debate, in Jacobsen's view, that the European Union has established a definition of cisgenesis. 'For example, they have laid down the maximum amount of exogenous DNA apart from the gene that can be introduced into a plant before it counts as transgenesis. You are allowed 20 base pairs', explains Jacobsen. 'The reasoning behind this is based on probability theory. A random fragment of 20 bases is highly likely to occur anyway at other places in the DNA of an organism. So you could say that no exogenous pieces of DNA have been introduced into the plant.'

The hostility towards genetic techniques is partly a product of ignorance about the degree of genetic variety that occurs naturally, Jacobsen believes: 'People

‘People wrongly imagine that plant varieties do not change’

wrongly imagine that plant varieties do not change. That is not the case. It is not for nothing that the field of plant breeding includes the topic of ‘maintenance breeding’. It is not easy to protect a breed against changes. There has been some research on the genetic stability of the model plant *Arabidopsis*, for example, in which the researchers bred 20 generations of the plant and studied the genetic changes that occurred. It turned out there were a lot of changes, and they were not just small mutations either. Dynamism and change are natural.’

GENE OUT OF CONTEXT

That may be so, but that is not what cisgenesis is, retorts Edith Lammerts van Bueren, extraordinary professor of Organic Plant Breeding at Wageningen University. This technique certainly does not stand a chance of being accepted by organic farmers, she says: ‘They assess processes, not just the product. Cisgenesis makes use of the same technique as transgenesis, so it is not appropriate for organic farmers. Quite apart from the question of whether the technique is compatible with organic farming, it is a travesty of the truth to say that cisgenesis delivers the same results as classic breeding. In cisgenesis you take a gene out of its context and introduce it at a location which is almost certainly unlike the position it had in the genome you took it from. In classic breeding a significant part of the chromosome moves with the gene. Opponents present that as a risk because you don’t know which genes you are taking along. That is true but we have far more experience with classic breeding. Our long experience has taught us how to select plants. That is not the case with cisgenesis.’

‘A plant is not a Lego set,’ adds Lammerts van Bueren, ‘for you to pick the blocks you need and build whatever you want with them. That is much too simplistic a view of things. By taking the genes out of their context, you get a completely different plant to the one you would create with classic breeding. I am not saying the risks will be bigger, and I don’t mind if the admission procedure for cisgenesis is made a bit easier, but do be honest about the fact that it is a transformation technique.’ ■



PHOTO GUY ACKERMANS

LINDA COENEN

Publicity officer at Aseed

‘With the right advisors you can steer things towards the conclusion you want’



PHOTO GUY ACKERMANS

EVERT JACOBSEN

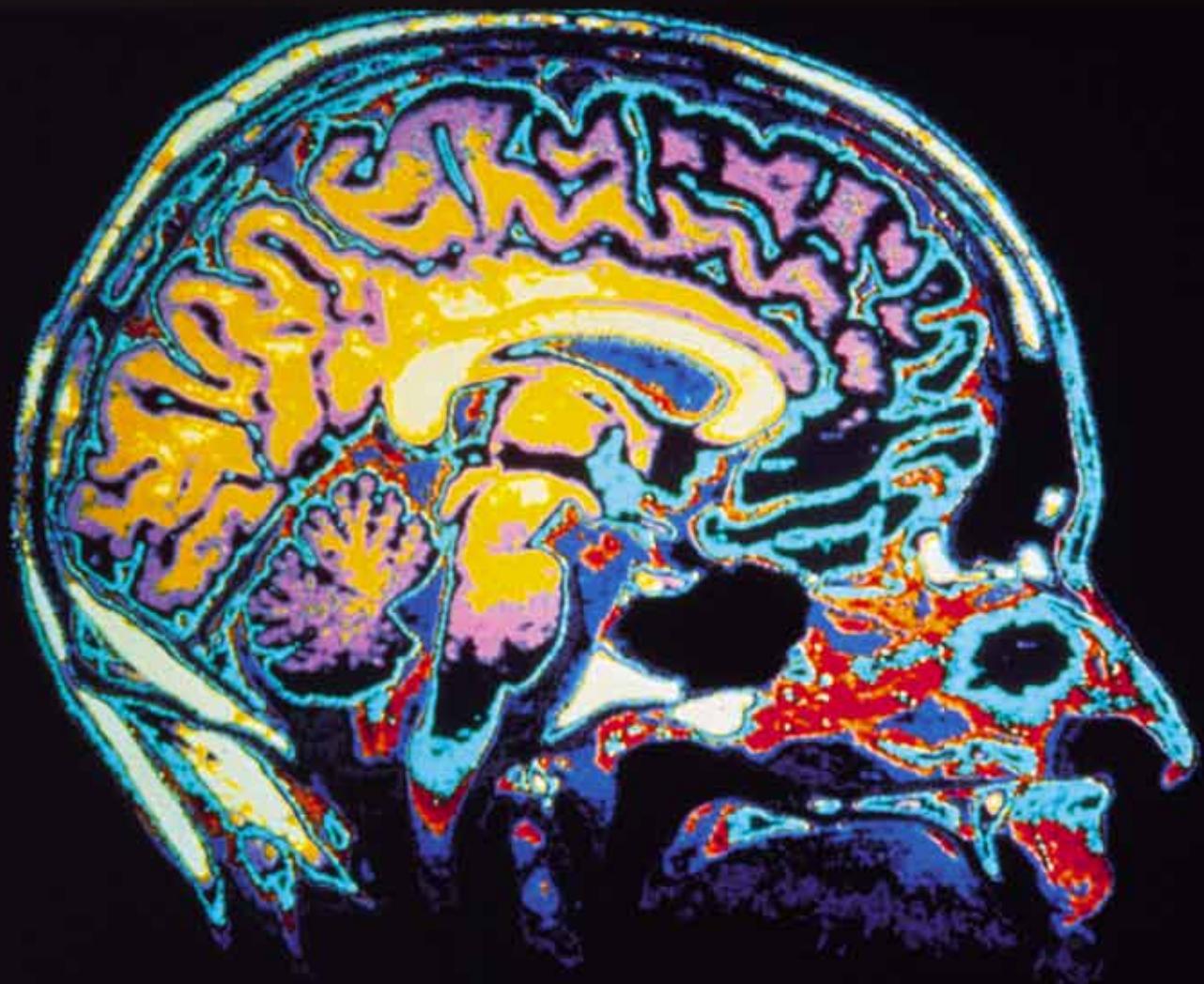
Professor of Plant Breeding,
Wageningen University

‘Dynamism and change are natural’

The scan's the limit

The MRI scanner is opening up all sorts of new possibilities for food scientists. It can be used to measure liver fat, for example, or to monitor the effect of vitamin B on memory.

TEXT ROB RAMAKER PHOTOGRAPHY CORBIS ILLUSTRATION SCHWANDT INFOGRAPHICS

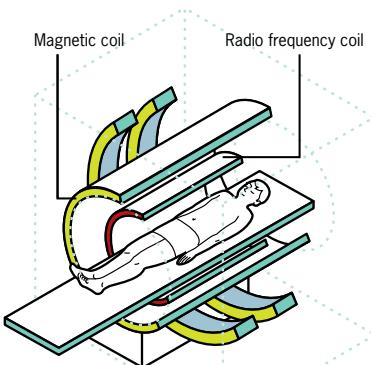


If I were starting at university now I would study neuroscience', says Frans Kok, head of the department of Human Nutrition at Wageningen University, part of Wageningen UR. With great enthusiasm, Kok describes the scope offered by the MRI scanner purchased last year by CAT-AgroFood, a technology fund jointly established by Wageningen UR, the province of Gelderland and the Dutch central government. The 2.5 million-euro machine – housed at the Gelderse Vallei hospital, which also makes use of it – offers researchers all sorts of new possibilities. Not only can it track a person's brain activity, but it effectively gives researchers a window into the body. It does not render blood tests, weight measurements and questionnaires redundant but it does provide an additional source of information. When a test subject or patient slides into an MRI scanner, he or she enters into a strong magnetic field. This causes all the hydrogen nuclei in the body to line up in the same direction, like iron filings around a strong magnet. Then a radio wave goes through the body, causing the nuclei to change direction. The speed at which they then return to their original position is different for each part of the body. With the help of smart software you can use these differences to obtain images of organs and other soft tissues.

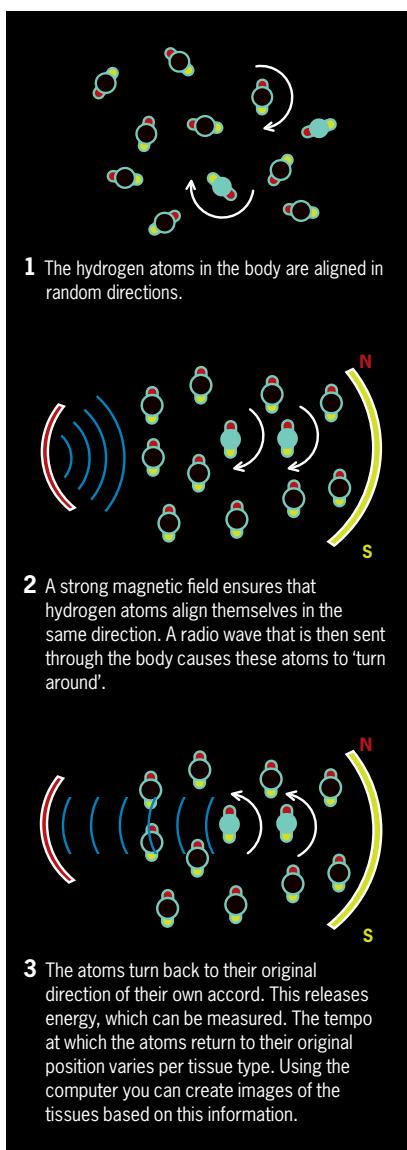
ABDOMINAL FAT

The Wageningen Belly Fat Study is one of the projects that have gained a new dimension thanks to the MRI scanner. 'We can now zoom in on excess fat in the abdominal cavity and measure it', says Kok. Previously you could only arrive at an approximation through blood tests. A specialized scanning technique now makes it possible to establish the exact amount of fat in the liver, for example. Researchers look for suitable participants for an intervention study among people with a lot of this 'visceral fat'. In the study, the test subjects are prescribed a healthier diet and in some cases more exercise.

Excess abdominal fat is of particular inter-



The MRI scanner uses a magnetic field and radio waves to produce signals in the body which are processed into images by a computer.



est because it is bad for the health. It can become chronically inflamed, releasing toxic cytokines into the system. These substances seem to be to blame for the diseases of affluence such as diabetes and cardiovascular disease. 'This does not mean we imagine that we are going to solve the obesity problem', says Kok. 'But even for very overweight people, losing a few kilos can make a big difference to their health.'

Besides providing images of the body, the scanner can also be used to observe brain activity using a technique known as functional MRI (fMRI). This makes use of the relative proportions of oxygen-poor and oxygen-rich haemoglobin, the protein complex that transports oxygen through the bloodstream. In order to meet an increased demand for energy, more blood flows through the active regions of the brain, keeping the proportion of oxygen-rich haemoglobin in the blood there relatively high. This makes it possible to relate stimuli to the brain regions that process them.

BETTER PERFORMANCE

The Human Nutrition researchers will use fMRI to look at such questions as the effect of nutrients on cognitive functions such as memory and attention spans. For example, they plan to give elderly people either vitamin B pills or a placebo. After two years the two groups will be compared using both fMRI and neuropsychological tests. The question then will be whether the elderly people on vitamin B perform better than the others on tests for memory, attention span and speed.

But for Kok these are by no means the only advantages of an MRI scanner. The Human Nutrition department is also studying the effect of sensory perception on appetite and satiety. Kok: 'We are looking at how the smell and taste of foods affect the pleasure centres in the brain. The mechanism may be disrupted in seriously overweight people and patients with particular conditions.'

This is a whole new field in which we have a lot to learn. That is another reason why we bought the scanner.' ■

From thesis to pig's toilet

A pigs' toilet, an animal-friendly barn or a micro-fermentation plant; the Pig Innovation Centre at Sterksel tests new ideas thought up by business people and scientists. Every year thousands of farmers go there for advice. 'Farmers don't want reports, they want implementation.'

TEXT ALBERT SIKKEMA PHOTOGRAPHY MARCEL VAN DEN BERGH





Three hairy pigs that have dug up the entire garden are the centre of attention outside the Pig Innovation Centre (VIC Sterksel), part of Wageningen UR. They are ‘half Hungarian’, says the centre’s manager, Mart Smolders. The father is a Hungarian curly-hair hog, a pig in sheep’s clothing, which some VIC employees came across in Hungary. ‘They have an excellent meat flavour and an interesting fatty acid composition’, says Smolders. ‘We inseminated our sows with sperm from this curly-hair hog. The meat would be suitable for a niche market. Many visitors have shown interest, for instance farmers who want to sell their pork door to door. The three curly-hair hogs are a source of inspiration.’ This makes them a perfect fit with the Sterksel philosophy: inspiration through implementation.

The Pig Innovation Centre develops new concepts for pig farms, such as a new nursery for sows, new feed systems and a pigs’ toilet. Sterksel led the way in developing group housing and reducing antibiotics use, and it has a number of welfare projects. Its work is appreciated by pig farmers, the government and civil society organizations alike. Last year, Sterksel had more than ten thousand visitors, including around three thousand pig farmers during the annual innovation days in June. The centre also frequently hosts excursions from abroad and it gives vocational training students practical lessons on the farm.

THREE WELFARE STARS

The latest innovation, currently under construction, is the Starplus barn – pig housing with a covered free-range area, manure separation, manure fermentation and lots of light. The plan is for the new barn to get three welfare stars from the Dutch Society for the Protection of Animals (another frequent visitor). ‘Starplus was conceived by three companies that developed the expertise jointly,’ says Smolders by way of illustrating the Sterksel approach. ‘They were each investigating different aspects; then we brought them together to see if they could integrate their systems for manure separation, mini-fermentation

and a new barn design. They invested their own money and the government provided support for the construction. We are now going to develop the concept further.’

Martien van Kempen, himself a pig farmer, is one of the initiators and investors. If the concept catches on, he will earn money from the sale of the barn to other pig farmers. He thinks there are advantages to building an innovative barn like this at the experimental farm. ‘Sterksel is pragmatic and flexible; the staff help you find solutions. They are a young team without preconceived ideas and very open to innovation. Another key feature is that Sterksel enjoys the support of pig farmers, who are frequent visitors. They have to be able to see for themselves how a new barn like this works. Sterksel is honest about what is feasible, which creates a support base for innovations.’

PERFECTING NEW IDEAS

Centre manager Smolders draws a diagram on the board. ‘Look, a farm’s existing system has been developed to perfection. But if you introduce an innovation, the effectiveness may drop to 70 percent. Pig farmers will not take that risk, so our task is to develop a new idea and increase its effectiveness from 70 to 110 percent, until the concept is ripe for practical application. Pig farmers can view the prototype here and get practical information from our experts and animal keepers. We don’t buy any of the material, we solve the teething problems.’

Smolders emphasizes that the innovation centre does not produce reports. ‘You write reports for your fellow researchers, not for farmers. They don’t want reports, they want practical implementation.’ Sterksel puts the application of science on show, which leads to interaction and discussions between visitors, and this in turn generates new ideas. ‘That is how the Prodromi barn originated. Fourteen sow farmers wanted a better design for the sows’ nursery so that the sow and her piglets would have more room. Then we brought in barn construction firms to join in developing a new concept.’ Ideas can also

come from civil society organizations such as the Society for the Protection of Animals. ‘We are a member of the Pig Network, a farming practice network for the development of new products and concepts under the supervision of the Society for the Protection of Animals.

One example is the ‘pigs’ toilet’, proposed by Cor Suselbeek of Dorset Farm Systems. This is a porous floor system in the corner of a barn at some distance from where the pigs feed and rest. ‘I developed that idea back in 2004 but the trials never took place and so I dumped the toilet in the attic.’ Eighteen months ago he got a phone call from Wageningen. The toilet was retrieved from the attic and Suselbeek started a trial at Sterksel.

‘In the past there were no clear agreements between businesses and the researchers so everyone just did their own thing,’ recalls Suselbeek. ‘Now there is more collaboration and discussion, thanks to Mart Smolders. We businesses deal with the technical aspects and we collaborate with Sterksel in investigating the practical applications. That works well.’ What is more, says Suselbeek, businesses are now swapping know-how. He improved the toilet at Sterksel by studying a construction in another practical experiment.

NOT LYING ON THE PIGLETS

Wageningen University, part of Wageningen UR, is now a member of the Pig Network too. ‘We collaborate a lot with Bas Kemp’s Adaptation Physiology science group,’ says Smolders. ‘We are currently developing new concepts on the basis of three PhD theses.’ One is already being applied in the Prodromi barn, where a nest has been created for the sow so that she does not lie on the piglets. Sterksel is also implementing a method whereby piglets learn from their mother how to eat solids, and a more gentle weaning process whereby the piglets remain in the nest while the mother is able to walk about. That makes the weaning process from milk to solids less abrupt, making the piglets less sus-

Sterksel is testing several different systems rather than putting all its eggs in one basket



ceptible to disease. Last year, Wageningen UR's Animal Sciences Group awarded Sterksel its Innovation Prize for these applications of Wageningen research.

The high levels of antibiotic use on pig farms have attracted considerable attention, but VIC Sterksel solved this problem years ago. 'The key to our approach is that we try to prevent disease spreading through the farm,' says Smolders. 'We adopt hygienic working methods and keep pig families together after weaning so we don't have diseases spreading from family to family. That reduces the consumption of antibiotics by 80 percent. The solution does not come out of a bottle; pig farmers will have to change their working methods.'

Moreover, Smolders is quick to add, the current low levels of antibiotics use at the innovation centre are not a given. 'Take the situation where we test a new housing system that does not yet meet all the health criteria. Then you

might need to increase antibiotics use temporarily.'

BIG MANURE FERMENTATION PLANT

Sterksel is not putting all its eggs in one basket when it comes to the environment either. Instead it is testing several systems. There is a big fermentation plant on the premises that produces enough energy to power 1500 homes. That is great but it does mean Smolders has to mix maize, i.e. valuable animal feed, in with the manure to achieve that level of energy production. In the light of the ongoing 'food, feed or fuel' debate, this is not an ideal solution. There is also a mini-fermentation plant that extracts energy from manure without the addition of other materials. This mini plant was developed jointly with suppliers and it makes the innovation centre energy neutral.

The farm's third and newest energy producer is a micro-fermentation plant from a

company that supplies fermentation plants to African villages. VIC Sterksel staff came across them and wondered whether they would work in the Netherlands too. The small-scale tank fits anywhere and farmers can use it to heat the barn for the piglets or to power their car.

Visitors can decide for themselves which of the three systems would suit them. 'We have not made a commercial investment in manure processing,' explains Smolders. 'I really want ten projects for manure processing, and extracting and recycling the minerals in the manure.' He says this diversity is necessary as pig farmers are going to be specializing in a certain market segment and will choose the farm systems and technologies appropriate for that segment.

PIGS AS A TOOL

'VIC Sterksel is not a pig farm. We see the pigs as a tool for developing knowledge,' says Smolders. Even so, he does run a farm with 330 sows and 2400 pigs bred for meat. This farm has a turnover of 1 million euros a year. He also earns 0.6 million euros from the production of biogas and 0.1 million from excursions. But that is not the innovation centre's main business. Over the past few years Sterksel has been getting more than 1.5 million euros in project revenue, compared with 0.6 million ten years ago. That growth has led to an increase in staff from seven to seventeen.

Smolders is about to leave his job as manager of VIC Sterksel. He is going to MS Schippers, a company that supplies equipment and systems to livestock farms, where he will be managing the Pigs Division. However, even on his last working day he will be signing a collaborative agreement for a sustainable pig farm with fifty businesses in the pork supply chain that all make use of the experimental farm. 'SME business people are innovative types. They are rather missing out in all the to-do about the top sectors so we want to increase our visibility as a group.' Of course, the signing will be taking place at Sterksel, the linchpin of the pig farming sector. ■

Youthful ideas for rural regeneration

To stem the exodus of young people from rural Friesland, students at Van Hall Larenstein researched what young Frisians want for their area, and helped them think through business plans.

TEXT ALEXANDRA BRANDERHORST PHOTOGRAPHY HOLLANDSE HOOGTE



'For many government officials it was an eye-opener to realize that young people had something to say'

Young people in Friesland, the wind-swept northern province of the Netherlands known for its distinct language and culture, would like more frequent bus services, better travel information and on-board wifi. Their wishes were taken into consideration when the regional bus services were tendered last year and a wifi pilot is now being run. All thanks to a project called Young Frisians on the Move. The project came about in 2008 when Wim Timmermans, lecturer in Green Urban Environment at Van Hall Larenstein University of Applied Sciences (VHL), part of Wageningen UR, and Khoji Wesselius of the provincial bureau for rural projects in northwest Friesland put their heads together. In the north-western corner of Friesland, the population is shrinking due to aging and outmigration by young people. 'We wanted to tackle this depopulation', says Wesselius. 'So we were interested in the views of young people in the northern reaches of Friesland, in their dreams, ideas and future plans. But our usual approach didn't work. The language of older people didn't mean anything to the youth.' So 'Young Frisians on the Move' took a different tack. In the first phase of the project in 2009 and 2010, students at VHL and NHL universities of applied sciences in Leeuwarden spoke to about 450 young people, approaching them on the street, at school or in canteens.

PROUD FRISIANS

These discussions led to the drawing up of a young people's agenda with ten points for attention in the areas of housing, work,

education, mobility, security and leisure. Municipal councils, the provincial council and civil society organizations then set to work on these issues. A conference was held at which the young people's wishes were shared with politicians, civil servants and people from the business world: they ranged from street lights on dark country lanes to affordable housing and university Master's programmes in Leeuwarden. Frisian youth are 'proud' of their province, the agenda declares. One of the ways they would like to express this is through lucrative tourist activities that create jobs. VHL students following a minor course on Development Planning helped them think through the possibilities. They came up with ideas for transforming abandoned villages into, for instance, a paintball village or a horror village where you could camp for a weekend with friends. They also dreamt up a Tsjerke Tour – a tour of churches where artists exhibit their work and local products are sold.

WAGON RIDES

In the project's second phase in 2011, VHL students once again set to work to draw up business plans for boosting the leisure economy in Northern Friesland, including events and tourism. With a view to young people's wish for university education in Leeuwarden, one of them took the first steps towards planning a student rowing festival along the route of the legendary Eleven Towns skating race. Johan de Braak, second year student of Forest and Nature Management, applied himself to making a plan for tours of the area. 'I lived in

Drachten for five years myself. You see some of the outlying villages there getting emptier and emptier too. People are leaving because they cannot find any work. Starting up a business can be a solution in such cases', he says.

Gerda Dam of the Sandy Road Ranch is enthusiastic about the students' ideas. Her riding school is near Esonstad holiday park. She wants to offer guests a ride in a wagon pulled by a tractor running on biodiesel or solar power. 'There are certainly things I can make use of in Johan's plan', responds Dam. 'Like the idea of getting a local to give a talk about the area during the ride and providing earphones with a translation in French and English.'

EYE-OPENER

'Some very good plans have come out of it', says Khoji Wesselius, who commissioned the plans. 'All in all, 'Young Frisians on the Move' has stirred things up a bit.' Even after the last session in January 2012, the project's impact continues to be felt. Young people and students are still delivering input, for example for the development of the University Campus of Friesland and of tourist activities. 'It was innovative to look at the decline from the point of view of young people, and to approach young people through students who speak their language', says Wesselius. VHL lecturer Wim Timmermans agrees. 'For many government officials and civil servants it was an eye-opener to realize that young people had something to say about this. You cannot do anything about an aging population but you can try to keep young people in an area.' ■



The city is hungry

Industrial-scale agriculture is the only way to feed the world's fast-growing megacities, says Alterra. 'Agroparks', with sustainability as a top priority.

TEXT RENÉ DIDDE PHOTOGRAPHY HOLLANDSE HOOGTE ILLUSTRATION JENNY VAN DRIEL

Aguascalientes in Mexico is one of the 20 fastest growing cities in the world. In 2000, this metropolis had 900,000 residents; now it has 1.5 million. Named after nearby hot springs, the city faces problems because the farmland around it is increasingly parched. And the problems do not stop there. Just four hours' drive to the south lies Mexico City, a megacity with 25 million inhabitants, and two hours away to the south-west lies Guadalajara, with 5 million inhabitants. The negative effects of increasing migration from the countryside to the cities are visible. Food production is hampered by the water shortages. 'There is no question of famine, but the city is certainly hungry. Importing food from elsewhere is expensive', says Madeleine van Mansfeld, landscape ecologist at Alterra, part of Wageningen UR. She is helping to develop a large-scale plan for feeding the population of Aguascalientes with sufficient, good quality, sustainable food.

THE EDGE OF THE CITY

The concept Alterra is working on is called a Metropolitan Food Cluster (MFC). It will entail high-tech farming on the edge of the city and a well-organized water supply combined with improved collaboration in the countryside. 'If you encourage small and medium producers located further away from the city to form cooperatives, food chains from the countryside to the city can function better', says Van Mansfeld.

MFCs, or agroparks, are large-scale constellations of livestock farms, vast greenhouses full of fruit and vegetables, fish farms and algae farms, where food production and the processing of waste products go hand in hand. An important feature is that the vast amounts of organic waste such as manure, foliage and peels serve as feed for such products as algae, mushrooms or fish. The waste eventually gets processed into biofuel through fermentation, gasification or pyrol-

ysis. The electricity and heat generated are then used in the agropark.

But, Van Mansfeld points out, an MFC is not a readymade product that can go straight from the drawing board in Wageningen to a Mexican city. Alterra sees its role as that of instigator and source of inspiration. The development of the plan will be funded by two Mexican banks and the regional and national governments. In Aguascalientes, six large businesses are collaborating on the plan: a dairy producer, a dairy processor, two chicken farmers and two horticulturalists with plans for a large greenhouse complex.

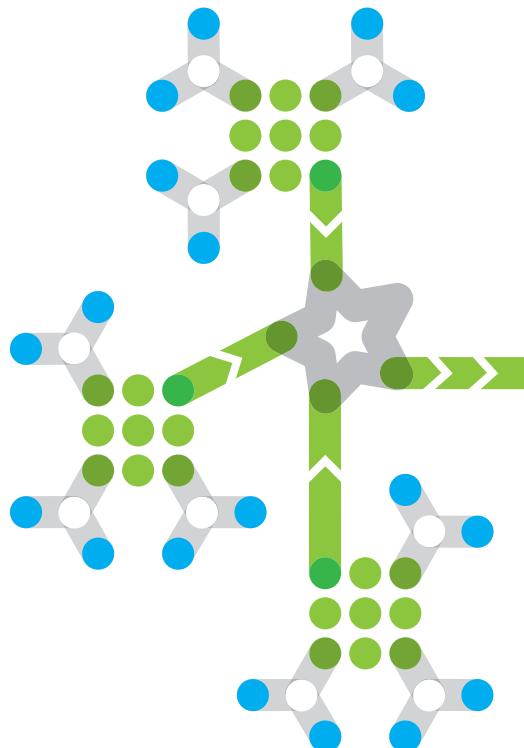
The MFC will be established on a new location but links will be maintained with established companies.

The first step is to persuade farmers to collaborate with the MFC by, for example, delivering agricultural products or processing waste and by-products. 'They either participate directly in the MFC or they organize themselves in separate cooperatives. By collaborating and pooling expertise they can obtain access to better seeds and seedlings as well as new techniques in the field of mechanization and irrigation', explains Van Mansfeld.

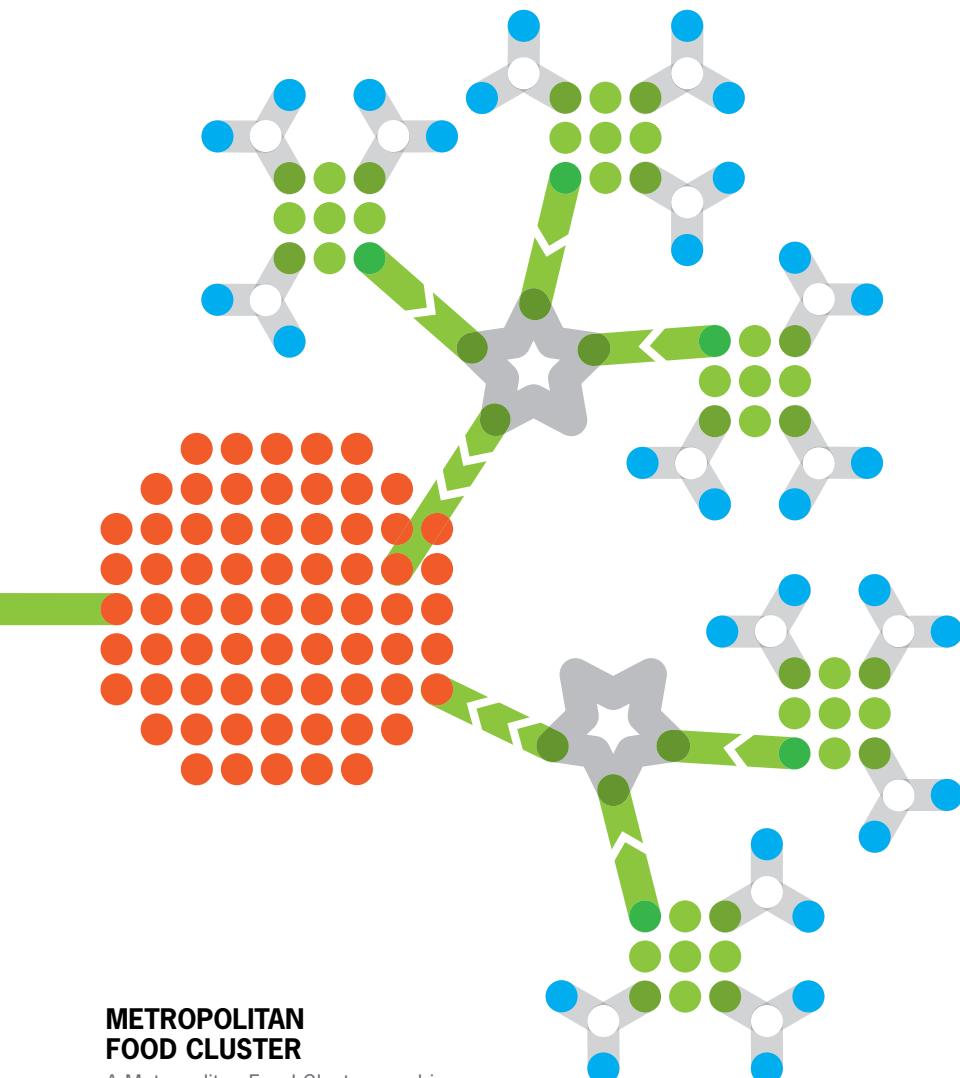
RINSING VEGETABLE CRATES

Suppliers and processing companies are welcome at the distribution centre. 'What we have in mind is a business complex where the vegetable crates are rinsed, one company that cleans the milk churns, others that cut the vegetables, and packers that deliver the appropriate packaging for all the farm products', says Van Mansfeld. A manufacturer of farm machinery is also considering moving close to the MFC.

Aguascalientes is centrally located between Mexico's major cities and on the transport route to the United States. 'If it takes off, it could supply food not just to Aguascalientes but also to Mexico City, Guadalajara and perhaps even the United States. This is >



'At present, live animals are the only way of guaranteeing freshness'



METROPOLITAN FOOD CLUSTER

A Metropolitan Food Cluster combines high-tech in agroparks with collaboration with small rural producers.



Collaborating small producers



PHOTO GUY ACKERMANS

MADELEINE VAN MANSFELD,
Landscape Ecologist,
Alterra Wageningen UR

'Farmers can gain access to better seeds'



PHOTO GUY ACKERMANS

PETER SMEETS,
Project director
Metropolitan Food Clusters
and Agroparks, Alterra
Wageningen UR

'In modern barns you can do more for animal welfare'



PHOTO GUY ACKERMANS

MARCEL KUIJPERS,
Owner of Kuijpers Kip

'If you stop carting chickens around, the city can get better food'



PHOTO GUY ACKERMANS

HAN WISKERKE,
Professor of Rural Sociology,
Wageningen University, part
of Wageningen UR

'You cannot decide on an MFC
in a top-down way'

the ambition of both the government and the entrepreneurs in the city', explains Van Mansfeld.

CHINA, SOUTH KOREA AND INDIA

The Mexico study is not an isolated case. Similar feasibility studies are being carried out near Beijing in China, in South Korea and in India, and there are already concrete plans for MFCs with input from Wageningen UR. For example Beijing wants to produce more food on the outskirts of the city so as to feed its 20 million mouths itself instead of importing food from other parts of the country or even from abroad, at great expense in transport costs. Wageningen UR and the horticultural association Greenport Holland signed an agreement with Beijing in February on implementing the plans.

It is hardly surprising there is so much interest in the MFC concept. In fast-growing economies a mass migration to the cities is taking place. It is estimated that by 2050, 75 percent of the world's 9 billion people will be city-dwellers. The economic growth of countries such as China, India, Brazil and Indonesia has led to a demand for more and better quality food. The countryside, the traditional home of farming activities, is emptying out, but the radical innovation stimulated by an MFC will prompt the remaining farmers to innovate and thus to keep the MFC running, says Alterra. It also makes it possible to run agricultural production along sustainable lines, with optimal attention to animal welfare, claims Peter Smeets, project director for Metropolitan Food Clusters and Agroparks at Alterra. 'Not only is an MFC or agropark a way of integrating several agricultural production chains, but it also makes it possible to generate energy in smart ways, to recover resources such as nitrogen and phosphate and to make good use of all the protein in waste products.'

Maximum use of technology leads to opti-

mal efficiency, according to Smeets. Precision agriculture in which plants and animals receive tailor-made treatment keeps requirements for energy, pesticides, artificial fertilizer and water to a minimum. 'Megabarns such as those we are familiar with from the Netherlands are controversial because they have been located in the wrong places, not because there is anything wrong with them in terms of sustainability', says Smeets. 'In modern barns you can do much more for animal welfare as well as for emissions levels than in conventional barns.' The concept does have to be implemented in one fell swoop; you cannot gradually grow towards large-scale production, in Smeets' view. 'The smallest possible unit at the slaughterhouse determines the size of livestock farms; the limits of the dairy processing plant determine the size of dairy farms', says Smeets.

DEALING WITH BUREAUCRACY

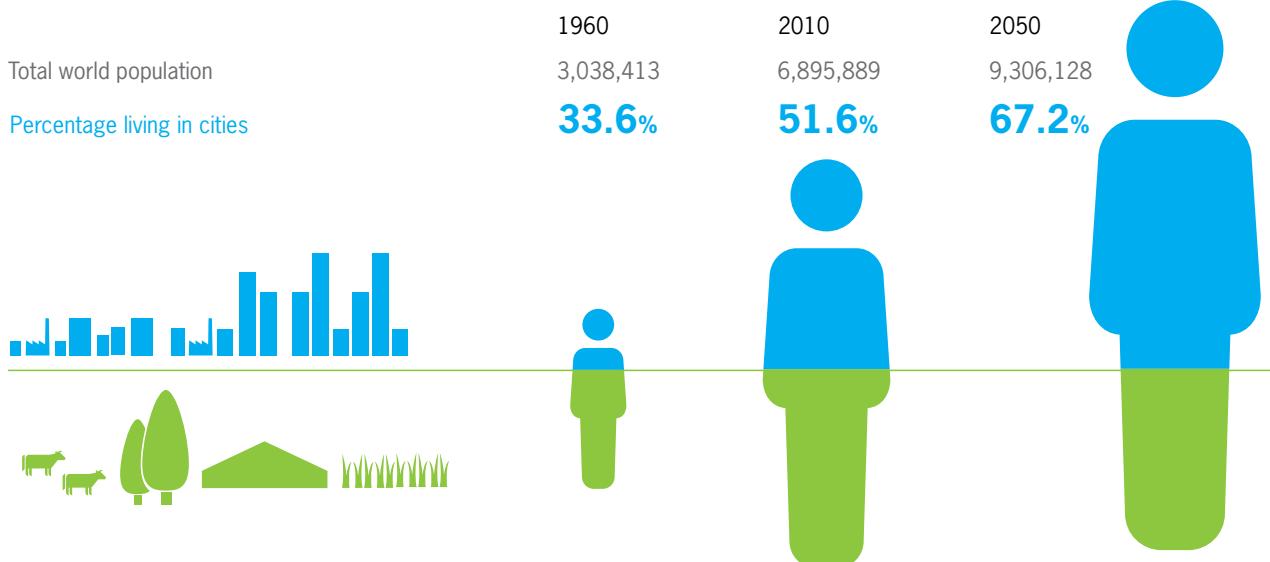
Just like Van Mansfeld, Smeets emphasizes that establishing an MFC is not a matter of working to a western blueprint. Smeets cites the example of India, where legislation prohibits companies from importing more than 150 cows per year. It would not be easy to establish an MFC with 10,000 cows under those conditions. 'The hardware at an MFC is relatively easy to design, but the software and orgware are a lot trickier', says Smeets. The orgware – the organizational capacity-building work of reflecting on networks among chain players, forging coalitions and dealing with the often massive bureaucracy – is much more complicated than building the MFC itself.

The software, the organization of training and education and the R&D, all come in for attention from the Wageningen researchers too. Where formerly farmers tied 20 chickens to their mopeds and brought them to market, now truck drivers need to be trained in managing cooling systems. At the same time, MFCs need to be >

'Large scale can make you vulnerable too'

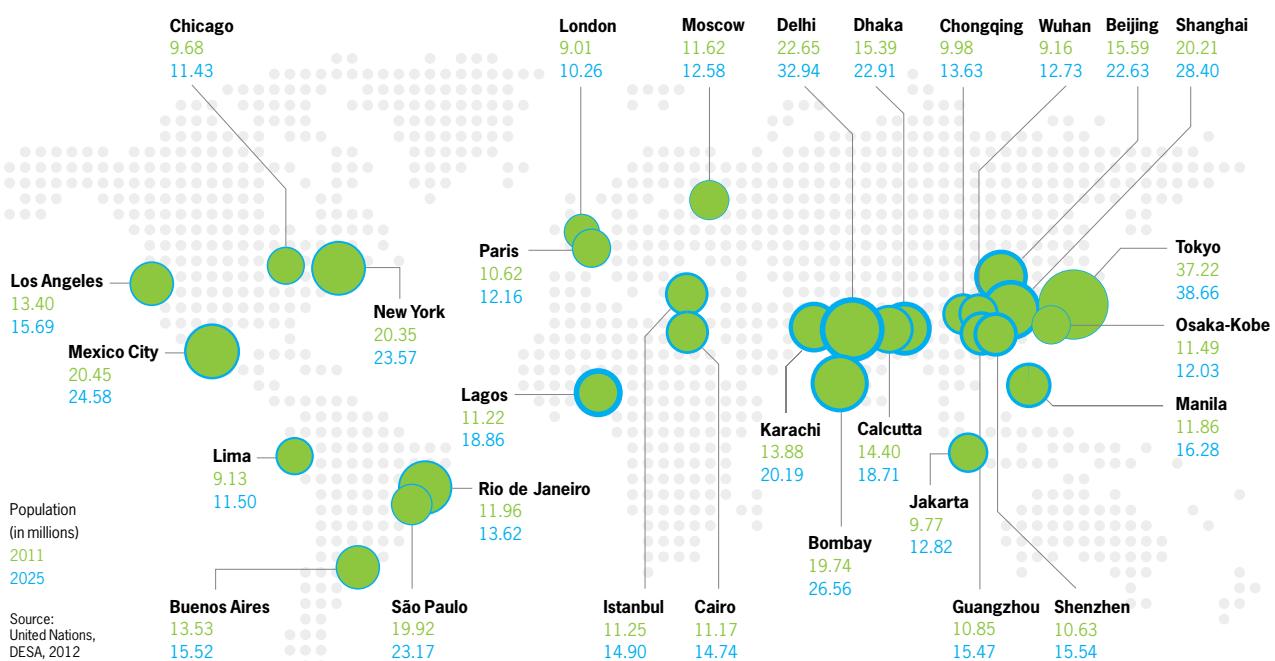
URBANIZATION

The worldwide shift to the cities

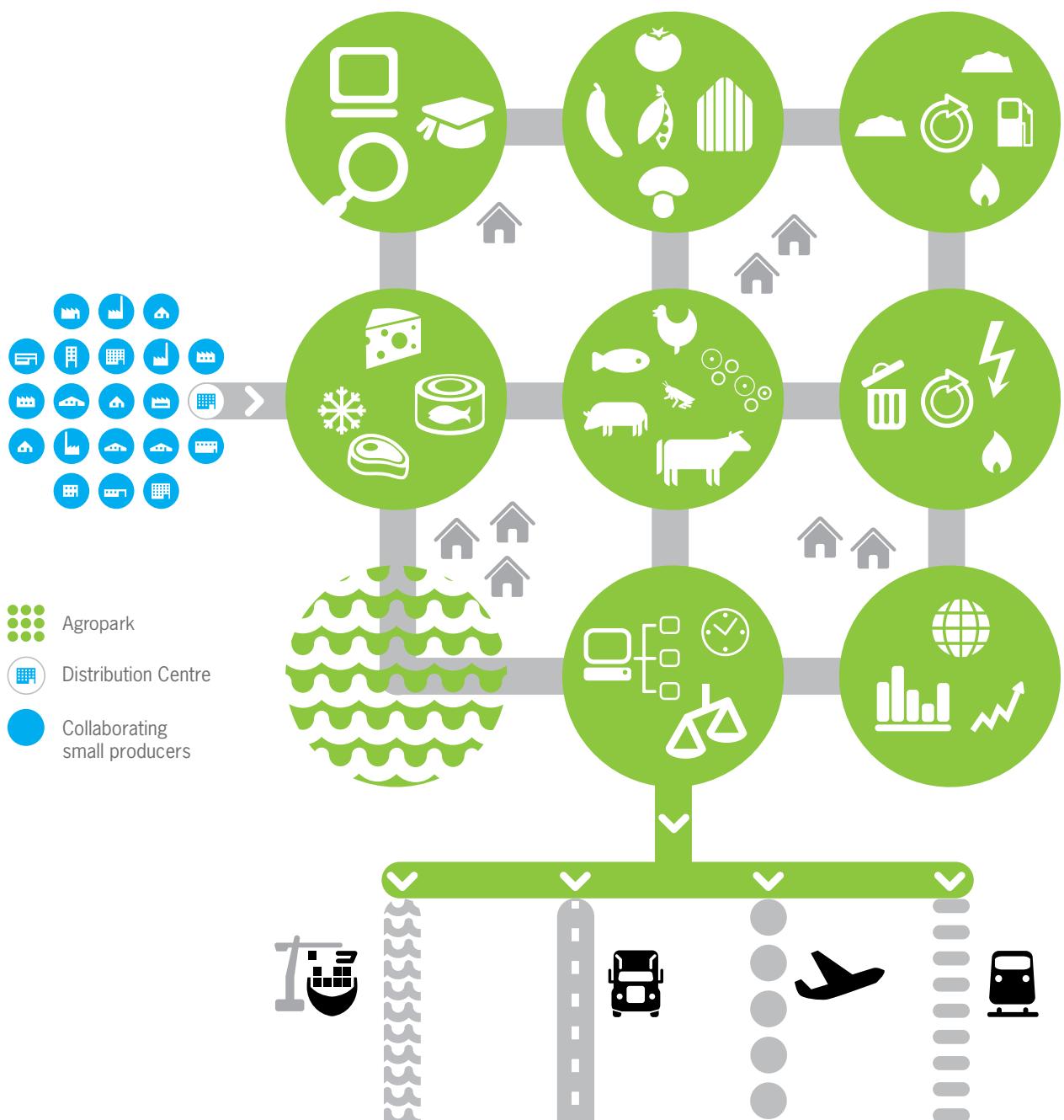


MEGACITIES

Urbanization in megacities with at least 10 million inhabitants expected in 2025



'We could achieve the most by stopping transporting animals'



AGROPARKS

Agroparks are large-scale conglomerates of food production and waste processing companies in combination with providers of services such as R&D, education, trade and logistical facilities, park management and buildings. Food, feeds and raw materials are produced by livestock companies, in greenhouses, on fish farms and in algae nurseries. Raw materials are processed on the spot into, for example, dairy products, preserves or chilled meats.

Organic waste is used as feed for algae or fish, or as horticultural fertilizer. Remaining residues are used to generate electricity and heat for the agropark, through fermentation, gasification or pyrolysis. Suppliers and processors are concentrated at a distribution centre. These include companies that rinse the vegetable crates, haulage companies and suppliers of agricultural machinery and of packaging material for farm products.

as compatible as possible with the farming culture in the country concerned.

To this end, Smeets and Van Mansfeld organize regular excursions to put young, enterprising people from Mexico, India and China in touch with Dutch experts. One such expert is Marcel Kuijpers, owner of Kuijpers Kip chicken company in the Dutch province of Brabant. Kuijpers regularly welcomes students from home and abroad and shares his knowledge about poultry farming with them. 'I don't really see the concept of an MFC as an exercise in upscaling', says Kuijpers. 'In our company we are actually trying to scale down by shortening chains, in transport for example. We could achieve the most in terms of sustainability, animal welfare and above all in the quality of the meat in the chicken industry, by stopping transporting the animals. This also saves a lot of money, energy and time and makes the meat more traceable.'

BUILDING A SLAUGHTERHOUSE

In order to cut back further on transport, Kuijpers wants to build his own slaughterhouse right next door to his chicken barn in Horst aan de Maas. He calculated that the smallest viable slaughtering unit would be one for 4000 chickens per hour or 32,000 per day. A standard slaughterhouse is much bigger than that, processing 400,000 chickens per day.

Kuijpers thinks that under the right condi-

tions, a similar concept would be viable in countries such as China, India and Mexico. With meat consumption in these countries increasing at a rapid rate, the logistics in the chain have got to be better organized. 'At present, bringing live animals to the market is the only way of guaranteeing freshness. They are often slaughtered on the street, which is unhygienic when the turnover increases', says Kuijpers. 'If you stop carting live chickens around and farm them, slaughter them and store them closer to the city, it can be supplied with better quality food.'

Kuijpers' company in Horst aan de Maas is set to grow into a sort of mini-MFC. Feed will be grown at the location or shipped in; waste products such as manure will be used in horticulture and on fish farms or will be fermented to make biogas. Two pig farms and a technical company in Horst aan de Maas are collaborating as well. 'The long-term aim is to have more companies linking up with us.'

EUROPEAN CITIES

Han Wiskerke, professor of Rural Sociology at Wageningen University, part of Wageningen UR, is doing research on the food supply for European cities. He received a 4.5 million euro EU grant for this research in March. He believes that when you develop MFCs you must take a good look at the situation in the region. 'Sometimes an MFC

provides the answer, but not necessarily always. In countries in the sub-Saharan region 70 to 80 percent of the population still depend on agriculture for their livelihood. It seems to me that you cannot concentrate all that production in an MFC and you certainly cannot make the decision to do so in a top-down manner.'

Doctoral research in Dar-es-Salaam, the fast-growing capital of Tanzania, has demonstrated that the main bottleneck for a good food supply is inadequate infrastructure, explains Wiskerke. 'The largely small-scale agriculture on the outskirts of the city could be more efficient, of course, but the system of production in small units and sale in small shops or street stalls functions reasonably well and makes food accessible to poor people. Improving the roads would work wonders, though.'

In principle, Wiskerke has no objections to large-scale agriculture such as an MFC. 'But I do have some reservations. Large-scale farming can be vulnerable as well: there is the danger of an epidemic or a disease that can cripple the entire production at a blow. And market forces could at any point make it more lucrative for the entrepreneurs at an MFC to export their products elsewhere. Then the local city would suddenly have its food supply cut off.' ■

A lot of hype, less effective aid

Development Aid organizations get carried away by emotional hypotheses, claims Thea Hilhorst. This makes them less effective. Hilhorst's research was on aid to victims of sexual violence in the Congo.

TEXT ALEXANDRA BRANDERHORST PHOTOGRAPHY LINEAIR

Researcher Nynke Douma and Thea Hilhorst, professor of Disaster Studies at Wageningen, part of Wageningen UR, analysed aid to victims of sexual violence in the Democratic Republic of Congo towards the end of 2011. A long and devastating war which officially ended in 2002 was in reality still being waged. Both government forces and rebel militias made extensive use of rape as a weapon of war during the conflict.

Reports of mass rapes drew an indignant response from the international community. As a consequence, international aid organizations began to rush into the eastern provinces of North and South Kivu, where Hilhorst did her research. There are now

about 400 local and international aid organizations helping the victims, with a total budget of almost 90 million dollars since 2010. That is almost as much as the aid funding for the entire health sector.

Rape is indisputably a big problem. The UN estimates the number of cases since 1998 at 200,000, but estimates vary considerably and are often based on extrapolation, says Hilhorst. She believes numbers are sometimes exaggerated with a view to fundraising.

'Of course it is right to help women who have been raped,' says Hilhorst, 'but the efforts in the Congo were out of proportion.' The focus on rape led to other needs being neglected: needs such as maternity care, ed-



ucation and poverty alleviation. This is set out in the research report, *Fond de commerce?* In the course of her research, Hilhorst came across cases of poor women pretending to have been rape victims because this was the only way to qualify for aid.

The aid was one-sided, moreover. In most cases, it took the form of short-term medical care for the victims of sexual violence. There was little attention to the underlying cause, namely the powerless position of women in the Congo.

CARRIED AWAY BY THE HYPE

The reason why the aid got so out of proportion, in Hilhorst's view, is that the aid organizations allowed themselves to get



'Fundraising based on emotions works'

through emotional appeals: that works.' Cordaid, too, seeks donors by drawing attention to sexual violence in the Congo. De Voogd confirms that there was a massive influx of organizations in the Congo, all bent on quickly setting up projects and getting results to show for them. 'That is no good: you must set up projects carefully. Cordaid had already been working in the region for some time and also works on educating both men and women on the position of women.'

Another issue was a lack of coordination between the organizations in the Congo, says Hilhorst. All too often, the aid was orchestrated from the head offices of international aid organizations, without taking into account what other organizations were doing.

The solution to this problem lies, in Hilhorst's opinion, in professional aid delivery coordinated by the UN or another body above the various aid organizations. She therefore sees her research results as an argument for publicly funded development aid. This is something that is no longer taken for granted: in the Netherlands, for example, a debate on proposed cuts to development aid has been raging for a year. Hilhorst is afraid that if aid organizations become entirely dependent on donors, there will be even more emotionality and hypes. 'This shows what could happen to development aid if government funding is cut.' ■

carried away by the hype. Rape is a subject that makes a strong impression on both government and individual donors. After meeting rape victims in a hospital, American minister of foreign affairs Hillary Clinton immediately pledged 19 million dollars. 'Development organizations appeal to the emotions too much and chase after hypes like this, as a way of getting money out of donors', says Hilhorst. Aid to victims of sexual violence has become big business, the research concludes. And this business impedes rather than contributes to a real solution to the problem. A solution, says Hilhorst, which will come from improving the position of women rather than from short-term medical care.

The disproportionate focus on rape is an issue specific to the Congo, says Hilhorst. But a tendency for development organizations to focus on subjects that appeal to the general public is a wider problem, she believes. 'Malnourished orphans or other images of poverty that appeal to the imagination come in for more attention than other less visible but no less pressing problems.'

Dutch aid organization Cordaid has been running projects in the Congo for years and is dependent on donors for one third of its funding, with the rest coming from the Dutch government. Jos de Voogd of Cordaid acknowledges the problem. 'It's a fact that a fundraiser tries to raise funds

Investing in breakthroughs

Ground-breaking research on food safety is often underfunded: it is either too radical or of no commercial interest. So the *Food for Thought* campaign is appealing for generous donors. For research on farming rice with less water or for building a network of entrepreneurs in Africa. TEXT ALEXANDRA BRANDERHORST



‘Rice has been farmed in the same way for five or six thousand years’

Rice has been farmed in the same way, under water, for five or six thousand years. It is very important that we develop a rice variety or a cultivation method that requires less water. But no one is thinking it through at a fundamental level. The reason for this is that rice is grown by very large numbers of small farmers. So industry does not stand to gain from it', explains Prem Bindraban, senior researcher on Agrosystems at Wageningen University, part of Wageningen UR, and director of ISRIC World Soil Information.

Fresh water is becoming scarcer, yet it takes three to five thousand litres of water to produce one kilo of rice. But sadly, research on rice varieties that will grow under drier conditions is of little interest to either governments or the food industry. 'So it calls for a long-term investment', says Bindraban.

'Neither governments nor international research institutes can score easy points with it. And it is not at all sexy because it entails complex research. Is the need for water determined in the roots of the rice plant or do other factors play a role?' This is a key question for fundamental research.

Besides fundamental research, Bindraban also wants to do field research to look at, for example, whether the roots are less able to absorb nutrients from a drier soil. Socio-economic aspects will also be examined. 'Even if you do find a suitable rice variety, there is still a long way to go before you can

convince farmers to switch. Rice farming practices are deeply rooted in the local culture.'

The rice research project has already secured 1.35 million euros of the 3.5 million euros it needs. This is thanks to the Food for Thought, Thought for Food fundraising campaign for research on solving global food problems launched by Wageningen UR and the Wageningen University Fund in October 2010. Private individuals and institutions are asked to do their bit, and thanks to their donations, which come to more than 7.5 million euros in total, the rice research has now started, based at Plant Research International, part of Wageningen UR. 'We can already grow rice with half the usual volume of water but it still needs a muddy soil. With less water than that, yields collapse and we don't know why', explains Bindraban. 'We need to change the plant in some way. If we succeed in that, this research could have major implications.'

AGRIBUSINESS ACADEMY

All nine projects highlighted by Food for Thought aim at a sustainable food supply for a growing world population. Another example is the establishment of a network of entrepreneurs, the African Agribusiness Academy. 'Farmers in Africa often operate in isolation from the market. In order to improve linkages with the rest of the economy, we are focusing on entrepreneurs who trade

with small farmers: processing companies, middlemen and suppliers', says Bram Huijsman of Wageningen UR Centre for Development and Innovation. 'The network is intended to grow in the space of one and a half years from 60 to 200 entrepreneurs in Tanzania, Uganda and Kenya, and then expand throughout the continent', explains Huijsman. Entrepreneurs in the network exchange ideas through visits to companies, workshops, internships and business clubs. Other organizations involved are Sokoine University of Agriculture in Tanzania, and companies such as Nutreco, Unilever and Rijk Zwaan. 'Small and medium-sized entrepreneurs in Africa often work in isolation. They are extremely interested in networks as a way of getting new ideas, exploring the market and doing business', says Huijsman. 'Farmers benefit from this development of regional enterprise because it expands their markets and improves their income security. In the end that is good for food security too.' The African Agribusiness Academy needs less than one million euros for its pilot phase. It is almost there already. Huijsman: 'Food for Thought helps us forge links and provides a platform on which we can tell our story. This is an initiative for and by entrepreneurs. We hope that Dutch businesses will not only donate money but also get involved as entrepreneurs.' ■

www.foodforthought.wur.nl

'Farmers in Africa often operate in isolation from the market'



AGRICULTURAL KNOWLEDGE MANAGERS 12 YEARS ON

Knowledge for food security and health

After their Wageningen MSc, both Manish Kumar and Khumbuzile Zuma went into the non-profit sector. Kumar works to improve health in rural India. Zuma wants to set up an NGO that links programmes addressing water, food and environmental issues.

TEXT ALEXANDRA BRANDERHORST PHOTOGRAPHY HOLLANDSE HOOGTE (AMIT DEY AND BRAM LAMMERS)

Organizations need proper information to make proper decisions', says Manish Kumar. He completed his MSc in the Management of Agricultural Knowledge Systems (MAKS to insiders) in 2003 and has since then been working for NGOs back home in India. In 2007 he switched from the development to the health sector and started working for IntraHealth International, an international NGO based in India.

'Right now I am working with the State Governments of Bihar and Jharkhand to establish a human resources information system for health', explains Kumar on the phone from New Delhi, where he lives. The information system consists of data on all the health workers in the state, including doctors, paramedics and community health workers. 'With that information you can perform all kinds of analyses that will enable

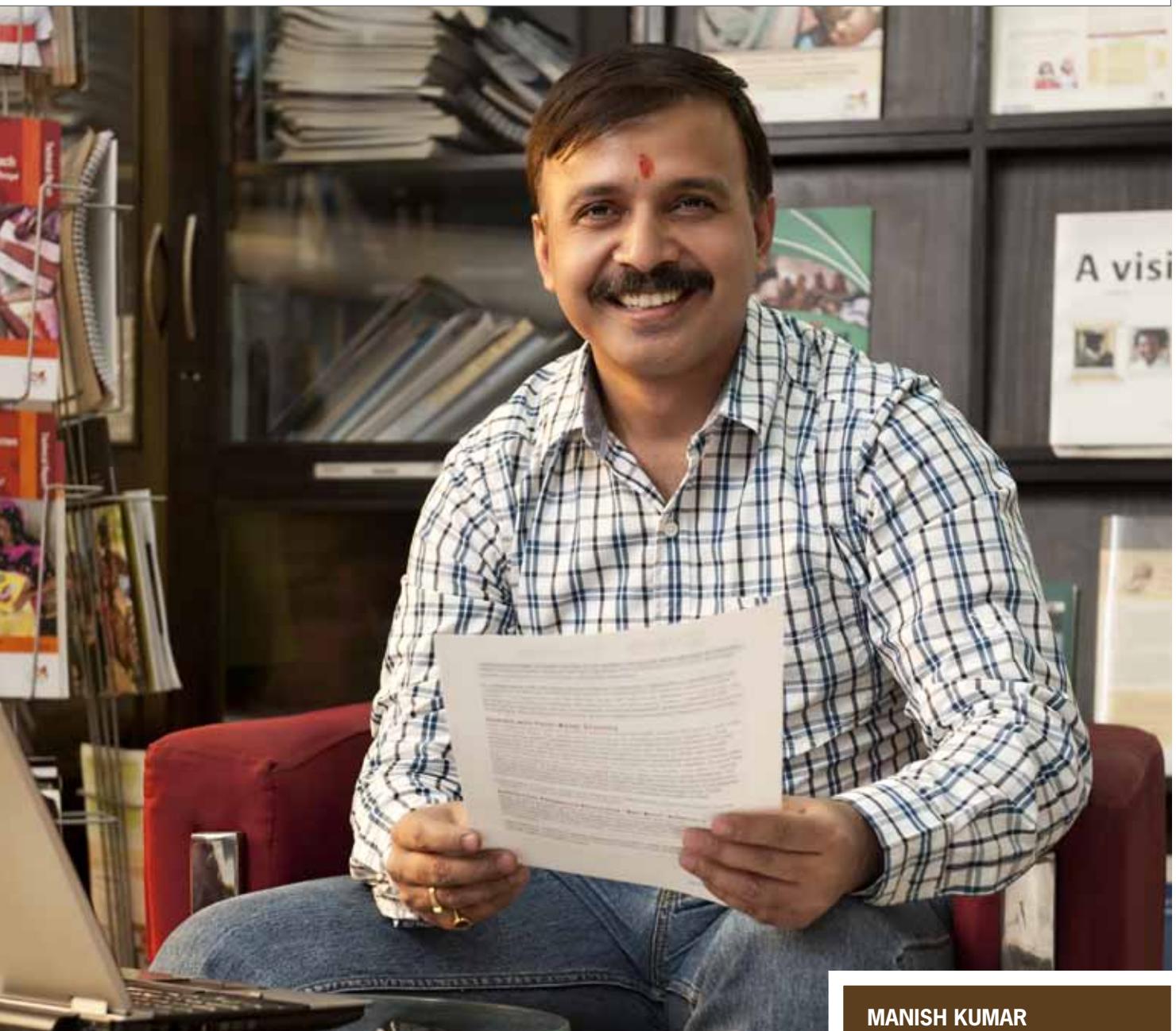
you to address issues related to workforce deployment, planning, management and development. That will lead to improvements in healthcare service delivery in the long-term.'

POLICY GAP

Former fellow student Khumbuzile Zuma would like to see more efficient and effective development programmes in her country. 'In South Africa we are experiencing many challenges concerning water and food security. We are globally known to have excellent policies, but they have never been very effective because of the persistent application of top-down approaches, coupled with corruption and lack of consistency', she says. Zuma had been working as a policy specialist in the water and sanitation sector and served as board member and representative campaigner for Africa in the Civil G8 sum-

mit. 'A lot of work has been done, but in Africa there is a tendency to separate issues like water, sanitation, food security and environment. Hence the different programmes that deal with these issues are not connected and because of that the available funds are not allocated adequately and consistently.' A few years ago Zuma felt that she was working too much at policy level, which be-

'I could either forget the MSc or sell the family house'



came too abstract. 'I wanted to bridge the policy gap and ensure that changes do take place in ordinary people's lives.' That is why she made a slight career change and started working for FoodBank South Africa (FBSA) in December 2010. FBSA, with its head office in Cape Town, distributes food that is donated by retailers and supermarkets or bought from funding, mostly to pensioners who are looking after orphaned children. 'Often grandparents on only a very small pension are raising their grandchildren, due to the HIV/Aids pandemic', Zuma explains. She supervises regional field workers and

monitors the programmes for identifying people in need of food help. She also maintains the relationships with funders, especially the government, and designs development strategies and new plans for FBSA.

But Zuma notices that handing out food is not enough. 'In the long run these people need to be able to support themselves rather than receive handouts that create dependency.' So she wants to establish an independent programme to give people skills, for example through small scale farming, marketing and nutrition training, specifically targeting >

MANISH KUMAR

Age: 39

Studied: MSc Management of Agricultural Knowledge Systems, 2001–2003

Works: technical advisor Human Resources for health and knowledge management at IntraHealth International in India

'We had to plough the land by hand'

children and HIV/Aids programmes.

'Teaching people skills to develop as individuals or earn their own food is very important to break the poverty cycle.'

LITTLE CHANCE OF STUDYING

When Kumar and Zuma were born, there seemed little chance that either of them would study abroad, or even study at all. Both of them had excellent grades at school however, and got by with state funding. Kumar recalls: 'In my environment most people were working in construction, mining or other forms of manual labour. The obvious degrees for me were medicine or engineering. Then at the examinations, I heard about agriculture. Other students helped me apply and I was selected by coincidence for Rajendra Agricultural University in Pusa.'

Upon receiving his Bachelor's degree, Kumar came 11th in a national competition, winning a fellowship for the Master's programme of his choice, Development Communication at Panjab University,

'the Wageningen of India'. During his time at Panjab he met Anne van den Ban, the famous former Wageningen professor of Agricultural Extension, at a conference in India. Van den Ban encouraged him to apply for the MAKS MSc programme Wageningen. However, it was difficult for Kumar to find funding. His application for a Dutch scholarship was rejected. 'My father and I went to every bank in the city to mortgage the house for a study loan, but the answer was "no" everywhere. In the end I could either forget the MSc or sell the family house, which was not an option.'

Then came a turning point in Kumar's life, when Van den Ban advised him to apply for funding to the then SRS foundation (*stichting Redelijk Studeren*, now the Anne van den Ban Scholarship Fund). Thanks to the financial support of SRS, Kumar finally made it to Wageningen, where Van den Ban was one of his supervisors. 'I used to meet him informally as well and had the opportunity to learn from his global experience.'

Last November Kumar met Van den Ban again at a conference in New Delhi. 'I took my wife and my infant son with me, because I wanted them to meet the person who made such a tremendous difference to my life.'

VERY POOR

Zuma grew up in the countryside. 'My father passed away when I was young and my mother was struggling to support all ten of us. We were very poor, even though we had a farm. My siblings and I had to plough the land by hand to help my mother and we had to work in other people's fields to earn a few Rand.'

She got a scholarship for her Bachelor's degree course at the University of KwaZulu-Natal. When she finished she volunteered for a farmer support group at the university and was soon employed to lead a community project on reversing soil degradation. A colleague of hers had studied in Wageningen and inspired Zuma to apply for a Dutch scholarship in order to take the MAKS programme. She gained the scholarship with the assistance of André Boon, programme coordinator of MAKS at that time. When she arrived in Wageningen, Zuma was awed by the international atmosphere. 'I had never seen people from so many different countries in one classroom.' Their class had 21 students from 17 countries, Kumar recalls. 'That diversity in experience and background was one of the best things. MAKS is a world in itself. There is no substitute for learning from such interaction', states Kumar. The graduates of the

WHERE DO KNOWLEDGE MANAGERS END UP?

Since 2001, 262 people have graduated from the MSc programme in the Management of Agricultural Knowledge Systems – later renamed Agro-ecological Knowledge Systems and Social Change, and now called Development and Rural Innovation. We know what one third of the 171 international and 91 Dutch alumni are now doing. More than 30 percent work at a university and 21 percent work for an international or development organization. About 14 percent work at a research institute and 11 percent are in government service. As many as 30 percent are researchers; 6 percent are working towards a PhD; 10 percent work in extension or as consultants; 8 percent are teachers or trainers; and 7 percent are in business management. Source: KLV Wageningen Alumni Network.



KHUMBUZILE ZUMA

Age: 39

Studied: MSc Management of Agricultural Knowledge Systems, 2001–2003

Works: development manager at FoodBank South Africa and is currently establishing an NGO focused on food and water security

class that started in 2001 still keep in touch with each other by email, at least once a year around Christmas.

According to Kumar, his studies in Wageningen were formative for his career in many ways. The expertise he gained is very relevant in India and other developing countries, he finds. ‘Knowledge management has become a priority for donors, organizations and governments. If you don’t utilize the knowledge in organizations, you are wasting resources and time reinventing the wheel instead of bringing the benefits of development efforts to the community.’ ■

Former fellow student Zuma would like to see knowledge and information being put to better use in South Africa as well. That is why she is establishing an NGO and research center in water and food security, the Food Sustainability Institute. ‘We want to bring officials together and connect different programmes addressing water, food and environmental issues. For example, training and supporting small-scale farmers to supply nutritious food to children and HIV/ aids programmes while generating income from government programmes on water and food security.’ ■

KLV PROFESSIONAL MATCH

FOR MORE THAN JUST MATCHES WITH THE JOB MARKET

We help graduates get jobs and help employees get the right staff," says Rob van Zwieten, manager and director of KLV Professional Match. Its position as an expert in life science jobs lets this organisation bring Wageningen graduates and major employers from the green sector together.

The former Career Centre, a cooperative venture involving KLV and Wageningen UR, was changed to KLV Professional Match in 2001 when Start People came on board. "It's a name that fits what we do better", reckons Rob van Zwieten. "As well as assisting people who are looking for work, for instance with job interview training and careers advice, we've also been focusing more on secondment, recruitment and selection as time progresses. We do that for

clients such as governmental bodies, engineering and consultancy agencies, animal feed producers, seed breeding companies and major food companies." So it is all about bringing supply and demand together in the jobs market for the green professions. As Rob puts it, "Our sister organisation KLV has 8500 members - a huge network of people with a BSc or MSc or PhD, representing a massive total amount of expertise in all Wageningen's fields."

KLV Professional Match recruits and selects just the right candidates for what are often very specific vacancies. Job seekers can register and create their own profiles through the website. They can actively look for jobs through the website, the KLV Update, careers days and job fairs. KLV Professional Match also searches actively; firstly within its own unique network, then as well via social media, for instance, and smart tools such as LinkedIn Recruiter.



"At the moment we're getting a relatively large number of permanent mid-level and senior positions," says Rob van Zwieten, "such as fairly specific job functions in the plant breeding and food industries. Jobs in the green segment are pretty scarce right now. But people from an agricultural background who are looking for commercial roles can find jobs relatively easily."

KLV Professional Match has more to offer graduates than just jobs, though. There are intensive training courses and compact workshops that let them immerse themselves in topics such as interview technique, communication, networking and time management. On top of that, KLV Professional Match offers reintegration procedures and careers guidance as well as supervising outplacements.

An overview of everything Professional Match has to offer can be found on klvprofessionalmatch.nl.

You can also follow them on the KLV Professional Match LinkedIn group.

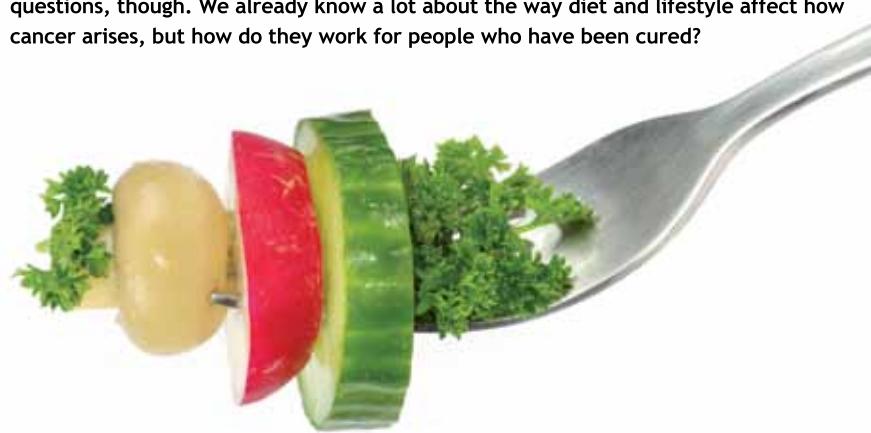
foto: Shutterstock

expert in life science jobs



STAYING HEALTHY AFTER CANCER

Good news: more and more cancers are being cured. That raises new research questions, though. We already know a lot about the way diet and lifestyle affect how cancer arises, but how do they work for people who have been cured?



Together with KLV and the study association Di-Et-Tri, the Human Nutrition department of Wageningen University organised an evening of lectures and debates on 11 April, at which three leading researchers from Wageningen University and VU University Amsterdam spoke about new research programmes looking at nutrition and behaviour *after* cancer. What can survivors do - and eat - to reduce the risks of further disease? And how can they be encouraged to change their eating patterns and lifestyles permanently?

Ellen Kampman, a professor at Wageningen University, sketched out what is already known about the links between lifestyle and the occurrence of cancer. It included concrete recommendations: avoid obesity, limit alcohol and red meat, eat plenty of vegetables and fruit. Kees de Graaf, also a professor at Wageningen University, is studying changes to the senses of taste and smell during chemotherapy. These arise not only from the way chemotherapy affects smell and taste cells, but also because people develop aversions to certain foodstuffs as the treatment makes them

nauseous. The research being done by Jaap Seidell of VU University Amsterdam focuses on what are known as 'lifestyle interventions'. Obesity is one risk factor, but people who are already patients often also put on weight during their treatment. Partly as a result, they have a higher risk of cardiovascular conditions, diabetes or other cancers after they are cured. They often manage to lose weight as a one-off, but *keeping* eating healthily is not always so easy. It turns out that they need to be strongly motivated. And self-motivated, too. Not exactly an earth-shattering conclusion, but it is interesting to see how intrinsic motivation can be built up and enhanced, for example using the Motivational Interviewing technique.

Why this particular topic? "Cancer research at Wageningen University is partly financed by the volunteers who do sponsored cycle rides for the Alpe d'HuZes foundation", explains Renate Winkels, a researcher at the Human Nutrition department. "Our department has its own cycling team, but we wanted to be able to use our knowledge of the subject to bring money in, instead of

ACTIVITIES

Info: www.klv.nl/en
(unless indicated otherwise)

12 June

KLV - General Assembly

Yearly general assembly of KLV Wageningen Alumni Network for all members.

13 June

Young KLV - Workshop - Scientific English -

Avoiding "non-native" influences

Learn all about recognising and avoiding non-native errors in written scientific English.

20 September

Young KLV - Course - CV writing

Personal feedback on your CV with at most seven participants.

20 September

KLV en Startlife - Business Café

Informal networking meeting for all who are interested in entrepreneurship.

just muscles and stamina. KLV was enthusiastic about this right from the start and joined forces with Di-Et-Tri to tackle finding the participants. What we make comes back into research via Alpe d'HuZes." The turnout was large and varied. "That was what we'd expected," says Renate. "It's a topic that people respond to - everyone knows somebody who's had cancer and you hear a lot about cancer and diet. People want to know what's correct and what they can do about it themselves. So there were a lot of practical questions, about sugar or about organic or processed products. Questions that they could get answers to with proper scientific foundations."

KLV regularly organises lectures and debates in Dutch or English about current issues in life sciences, often jointly with leading partners from the research and commercial communities.

An up-to-date overview can be found at bit.ly/klv/calendar

WANT TO BECOME A MEMBER?
Go to <http://bit.ly/membershipKLV>

More KLV news you can read in the KLV Update.

Check our website www.klv.nl/en for our online English version.

FUNDS

Sports grant for talented students

The Niels Smith Fund awarded sports grants to archer Carrie Wegh and skater Mayon Kuipers in April. They each received 1500 euros to help cover the costs of materials and training.

Carrie Wegh is doing a degree in Nutrition and Health at Wageningen University, part of Wageningen UR. She will put the grant towards the additional costs she incurs to combine her studies with her sport. Mayon Kuipers from the northern Dutch town of Heerenveen is a promising skater, especially in the sprint races. She is studying Food Technology at Van Hall Larenstein University of Applied Sciences, part of Wageningen UR.

The Niels Smith Fund was founded in memory of Niels Smith, a talented footballer from Wageningen who died at the age of 15 in 2009. The fund was established in 2010 by Niels's mother Marianne Remmers. Talented sportspeople studying at Wageningen University or VHL who do not receive support from the Dutch Olympic Committee can apply to the Niels Smith Fund for a grant.

SPIN-OFF

Grant for Plant-e

The Wageningen spin-off Plant-e, founded by Marjolein Helder MSc (WU Environmental Sciences 2008) and David Strik PhD (WU Environmental Protection 1999), has received a 250,000 euro Pre-Seed Grant from NGI LSH and ZonMw, so that it can develop further into a fully-fledged commercial company. 23 March 2012.

FUNDS

PHOTO GUY ACKERMANS

Fruitful appeal for Belmonte Arboretum

With the support of alumni, the collection of apple and pear trees in the Belmonte Arboretum in Wageningen is being expanded and equipped with state-of-the-art sources of visitors' information. In February, alumni received an appeal for support for the Wageningen University Fund's 'Malus Pyrus project'. The sum of 15,000 euros has already been raised. Fruit trees are prominent in the arboretum. Take the crab apples near the entrance, for instance: 'A real eye-catcher', says Koen Verhoeff, chair of the Arboretum Foundation. The money will be used for purposes such as grafting aging trees and devel-

oping new varieties of crab apple tree. It will also go towards placing posts bearing a code next to the trees. Via this code, visitors can use their mobile phones to consult online information about the tree and the collection. 'The apple and pear trees serve as an example of the way we want to do up the existing collections', says Verhoeff. In 2010, he established the Arboretum Foundation, which manages the Belmonte Arboretum jointly with Gelderland Landscape and Wageningen UR. Each of the parties provides one third of the funding. Info on Wageningen University Fund: www.wuf.wur.nl/uk/

UNIVERSITY

Master's programmes come first in Guide

In the 2012 edition of an annual Dutch guide to Master's programmes, Wageningen University came out with flying colours. The guide, published at the end of April, rates Wageningen as the best Dutch university for Master's programmes. It shares first place with the Open University, which offers degrees by distance learning. The guide, *De Keuzegids*, describes and compares all the

recognized Master's programmes in the Netherlands. This year, 800 programmes are assessed in detail on the basis of student evaluations and accreditation data. The Masters guide is not the only place where Wageningen comes top. For seven years in a row the university has been in first place for Bachelor's programmes in the general university guide.

ALUMNI MEETING

Veetelers celebrate golden jubilee

Study association De Veetelers (the cattle farmers) celebrated its fiftieth anniversary in February with festivities, a symposium and a reunion. More than 200 graduates joined in the fun.

The developments and changes of the past fifty years were highlighted in a presentation by Martin Scholten, director of Wageningen UR Livestock Research. 'In 1962, there were 55 graduates from the department of Livestock and Animal Husbandry, whereas now there are 80 graduates a year from the MSc in Animal Sciences. Then, 4 percent of the students were women; now the proportion of women is 70 percent. Then 25 percent of our students came from abroad; now it is 55 percent', said Scholten. Alumnus Jos Raaijmakers knows a bit about this too. He went to the then agricultural college in 1963 to study Livestock. 'There were three of us that year. One of us, Akke van der Zijpp, went on to become a professor. At the time she was the third woman student of Livestock.' The degree course has changed

radically since those days, he feels. 'In those days, the course on cattle feed was just a bunch of facts to learn; now everything is studied at a highly scientific level', Raaijmakers says. The reunion was quite an occasion, he thought, with interesting lectures and plenty of opportunity to catch up with people. 'A get-together like that is good for freshening up my social network and getting up-to-date on what people are doing now.'

Raaijmakers, who is now retired, knows a great many alumni. He held several different leadership posts at animal feeds company Hendrix (later Nutreco) and he attracted fresh talent from Wageningen to the company, as many as 100 people by his own estimate. 'That is probably the reason for my honorary membership of de Veetelers.'



PHOTO GUY ACKERMANS

WAGENINGEN WORLD



Wageningen in the world

Wageningen World ended up in Vietnam in April, when Nuno Vilaça from Portugal took it along to Halong Bay. Vilaça graduated from Wageningen University in 2008 with a Master's in Geo-Information Science. With a bit of luck his old course mates will recognize his shirt. 'I am wearing the MGI polo shirt designed by the class of 2006-2008. We have all got one!' says Vilaça in his email. He adds that he enjoys this feature. Why? 'Because it shows everyone how international Wageningen UR is! Are you reading this magazine far from Wageningen too? Email the photographic evidence to wageningen.world@wur.nl

COURSES

Climate Change and Governance

Climate change will seriously affect food production, food security and nature in developing countries. They will have to adjust to and mitigate climate change through complex change processes involving many different stakeholders. Wageningen UR Centre for Development Innovation (CDI) will run a course on Climate Change and Governance from 3 to 14 September 2012 in Wageningen. The course will prepare participants to play an active role in climate change processes in the context of sustainable development. Participants will gain a grasp of climate change and options for adaptation and mitigation, as well as of change processes and ways of working with stakeholders and influencing policy. Wageningen CDI runs courses in Africa and Asia on e.g. food security, governance, natural resource management and climate change. Info: www.cdi.wur.nl

IN MEMORIAM

B.M. Bakker MSc, WU Horticulture 1939, passed away at the age of 95. 26 March 2012.

Prof. R.W. Becking, WU Forestry 1952, has passed away. 13 October 2009.

B. Benvenuti PhD, WU Forestry 1956, passed away at the age of 83. 15 September 2011.

T. Biemond MSc, WU Land Development 1953, passed away at the age of 86. 26 March 2012.

A.H. Crijns PhD, WU Agricultural Plant Breeding 1948, passed away at the age of 91. 25 December 2011.

W.H. Douma PhD, WU Rural Sociology of the Western Regions 1959, passed away at the age of 83. 22 March 2012.

J. van den Ende MSc, WU Tropical Plant Breeding 1949, passed away at the age of 85. 19 December 2011.

C.W. de Gier MSc, WU Environmental Protection 2000, passed away at the age of 36. 12 October 2011.

T.J.J. Giesen MSc, WU Dairy Production 1967, passed away at the age of 69. 27 October 2010.

B. Gietema MSc, WU Horticulture 1956, passed away at the age of 82. 22 April 2012.

A.C.J. van Gils MSc, WU Rural Sociology of the Western Regions 1983, has passed away. Date unknown.

H.H.M. Hafkenscheid MSc, WU Horticulture 1967, passed away at the age of 75. 3 February 2012.

J.W. Heringa MSc, WU Tropical Forestry 1941, passed away at the age of 95. 8 February 2012.

H. Heringa MSc, WU Rural Sociology of the Non-Western Regions 1970, has passed away. Date unknown.

J. Hoeks PhD, WU Soil and Fertilisation Sciences 1969, passed away at the age of 68. 20 October 2011.

H.J.H. Janssen MSc, WU Zootechnics, has passed away. Date unknown.

G.S. Kahn MSc, WU Tropical Rural Economics 1955, has passed away. 2 December 2011.

Prof. K. Kerkstra, WU Landscape Architecture 1974, passed away at the age of 66. 29 March 2012.

T. Kouwenhoven PhD, WU Horticulture 1958, passed away at the age of 81. 19 December 2011.

H. Kuipers MSc, WU Land Development 1994, passed away at the age of 41. 29 January 2010.

F.P.S. Meddends MSc, WU Plant Breeding 1975, passed away at the age of 63. 27 January 2012.

W.J. Medema PhD, WU Farming Technology 1994, passed away at the age of 42. 21 February 2012.

H.P.A.S. Mestrom MSc, WU Farming Technology 1990, passed away at the age of 44. 2 December 2010.

F.H.M. Peijnenburg MSc, WU Environmental Protection 1978, passed away at the age of 56. 4 August 2009.

J.A. Posthuma MSc, WU Molecular Sciences 1994, passed away at the age of 44. 19 August 2010.

F.O. Reerink MSc, WU Soil and Fertilisation Sciences 1962, passed away at the age of 75. 25 March 2012.

C. Repelius MSc, WU Food Technology 1975, passed away at the age of 65. 3 January 2012.

J.H. Rigterink MSc, WU Agricultural Plant Breeding 1968, passed away at the age of 69. 5 April 2012.

C.W.S. Schmeil van Kraayenoord MSc, WU Tropical Forestry 1951, passed away at the age of 88. 21 January 2012.

G.N.J. van Sonsbeek MSc, WU Farming Technology 1979, passed away at the age of 58. 14 February 2012.

T.L. Steenbergen MSc, WU Agricultural Plant Breeding 1953, passed away at the age of 87. 3 December 2011.

A.P.C.J. Verkooijen MSc, WU Environmental Protection 1986, passed away at the age of 52. 19 September 2011.

Death announcements can be sent to secretariaat.klv@wur.nl

AWARD

Brouns wins research prize

Assistant professor of Microbiology Stan Brouns (WU Molecular Sciences 2001) has been granted the Research Award 2012 by the Wageningen University Fund. This prize for the best Wageningen scientific paper is awarded every four years. It was presented on 9 March during Wageningen University's 94th Founders' Day celebrations.

Brouns received a certificate and a cheque for 2500 euros for an article in *Science* – Small CRISPR RNAs guide antiviral defense in prokaryotes – in 2008. In this article he reveals how bacteria resist virus attacks. The researcher explains: 'Microbes create an

immune system by incorporating tiny fragments of the viral genome at a specific site in their own genome. Now we understand how that works, we can make bacteria resistant to viruses.'

The discovery has already led to applications in the dairy industry for the protection of the lactic acid bacteria used in yoghurt and cheese. 'If viruses get into a reactor vat, the bacteria can die. If you can make the bacteria immune beforehand, you can prevent the production process from coming to a standstill', says Brouns. He has used some of the prize money to treat his colleagues.



Stan Brouns (r) receives the Research Award.

PHOTO BART DE GOUW

PERSONALIA

Pim Brascamp PhD, WU Zootechnics 1972, is retiring as director of the Education Institute. 27 June 2012.



Pim Brascamp

Elske de Haas MSc, WU Animal Sciences 2009, PhD student in the Adaptation Physiology science group at Wageningen UR, has been awarded the NZV Travel Grant 2012, with a value of €850, for her poster presentation during the WIAS Science Day 2012. 2 February 2012.

Richard Immink PhD, WU Plant Breeding and Crop Protection 1997, has been appointed professor (by special appointment) of the Physiology of Flower Bulbs by Wageningen University, part of Wageningen UR. Immink is a researcher in molecular plant development at Plant Research International, Wageningen UR. 1 April 2012.

Kasper Janssen MSc, WU Management of Aquaculture and Fisheries 2010, has won the NZV 2012 Thesis Prize, worth €500, for an excellent thesis on an animal science subject that also scores well in terms of relevance to society at large. 29 March 2012.

Jan Knol PhD, Director of Gut Biology and Microbiology at Danone Research, has been appointed professor (by special appointment) of Intestinal Microbiology in Early Life by Wageningen University. 1 April 2012.

Prof. Mark van Loosdrecht, WU Environmental Protection 1985, has won the 2012 Lee Kuan Yew Water Prize for his contributions in making waste-water purification technology more sustainable. 13 March 2012.

Prof. Michael Müller, University of Freiburg Chemistry/Biochemistry 1984, professor of

Nutrition, Metabolism and Genomics at Wageningen University, has been appointed visiting professor at the agricultural university of Nanjing in China. 5 April 2012.

Shirley Pomponi PhD, marine biologist at the Harbor Branch Oceanographic Institute, Florida Atlantic University in Fort Pierce (USA), has been appointed professor (by special appointment) of Marine Biotechnology by Wageningen University. 1 April 2012.

Prof. Marten Scheffer of the Aquatic Ecology and Water Quality Management chair group at Wageningen University has been elected member of the Royal Dutch Academy of Sciences (KNAW). 9 May 2012.

Laan van Staalduinen MSc, WU Economics of Agriculture and the Environment 1992, has been appointed managing director of the Social Sciences Group in Wageningen UR. 15 March 2012.

Prof. Leo Stroosnijder, WU Tropical Irrigation and Soil and Water Management 1970, has retired from his position as professor of Land Degradation and Development at Wageningen University. 3 May 2012.



Leo Stroosnijder

Pablo Tittonell PhD, WU Crop Science 2003, has been appointed Professor of Organic Farming Systems at Wageningen University. Tittonell succeeds Prof. Ariena van Bruggen, who left for the USA in 2009. 1 March 2012.

Remco de Veer MSc, WU Animal Sciences and Management Economics 2012 and his brother Jeroen de Veer, studying Animal Sciences at WU, came first in the 'students'

category in the Best Farmer 2012 competition run by the Best Farmer business platform for dairy and arable farmers. 29 March 2012.

Annelies Veraart MSc, University of Amsterdam Biological Sciences 2006 and PhD student at Wageningen University, has received a Rubicon grant as a promising scientist from the Netherlands Organization for Scientific Research in order to acquire research experience at the Max Planck Institute for Marine Microbiology in Bremen (Germany). 3 April 2012.

Marcel Visser PhD, head of Animal Ecology at the Netherlands Institute of Ecology (NIOO-KNAW), has been appointed professor by special appointment in Ecological Genetics by Wageningen University. 1 April 2012.

Prof. Lous van Vloten-Doting, former director of the Plant Protection Service of Wageningen UR, has been appointed Knight of the Order of Oranje-Nassau for her personal services to society in the fields of administration, advice and initiatives. 27 April 2012.

Albert van der Wal PhD, WU PhD 1996, has been appointed professor by special appointment in Electrochemical Water Treatment by Wageningen University. Van der Wal is one of the founders and the R&D director of Voltea BV. 1 April 2012.

Tjitske Wierenga-Posthumus MSc, WU Rural Sociology of the Western Regions 1970, has been appointed Knight of the Order of Oranje-Nassau, in part for her board work for Rabobank Krimpenerwaard and as member of the Schieland and Krimpenerwaard water board. 27 April 2012.

Grietje Zeeman PhD, WU Environmental Protection 1979, has been appointed a professor holding a personal chair in New Public Sanitation by Wageningen University. Zeeman was previously an associate professor in the Anaerobic Treatment of Waste and Waste Water. 1 May 2012.



PHOTO MACHIEL LAMERS

Making sure Kenyans gain from tourism

The African Wildlife Foundation has been promoting ecotourism projects in Kenya for as long as 20 years, says Machiel Lamers of the Environmental Policy chair group at Wageningen University, part of Wageningen UR. 'The objectives are to make these initiatives more lucrative, to improve local living conditions and to protect nature.'

In collaboration with René van der Duim of the

Cultural Geography chair group and with the Maastricht School of Management, Lamers is evaluating the long-term success of this NGO in three projects in Kenya. These projects encourage the local pastoralists to reduce the size of their herds in part of their territory for the sake of the vegetation and wildlife there. In return, a private investor is found who sets up a high-end lodge catering for super-rich tourists. This gen-

erates so much money that some of it can be invested in local education and health care. 'But it also leads to fraud, inequality and new elites, so that after a while the original objectives get watered down', explains Lamers. 'We try to come up with solutions for this. You could for example get the NGO to go on playing the role of intermediary in the projects for longer.'
Info: machiel.lamers@wur.nl