

'Tendering can never be routine'

Kees van Diepen, soil scientist

12.01.

00 On 12 January 2000, Kees van Diepen resumed the management of the MARSOP yield prediction model he had developed.



Made by Alterra, 2000-2010

Kees van Diepen has been computer modelling for a long time: initially, just crop growth, then, potential food production, and finally, harvest predictions. As well as his work on models, he wanted to talk about the nerve-racking business of tendering.

by Leo Klep

> Van Diepen became involved in modelling agricultural production in the early 1980s, when working at ISRIC's predecessor, Wageningen's Soil Science Museum. He continued at CABO (the Centre for Agrobiological Research), then home of the research group of the doyen of theoretical crop modelling, Professor C.T. de Wit. At that time, crop growth models were scaled up to make it possible to estimate the productivity of soils and, ultimately, the maximum feasible world food production.

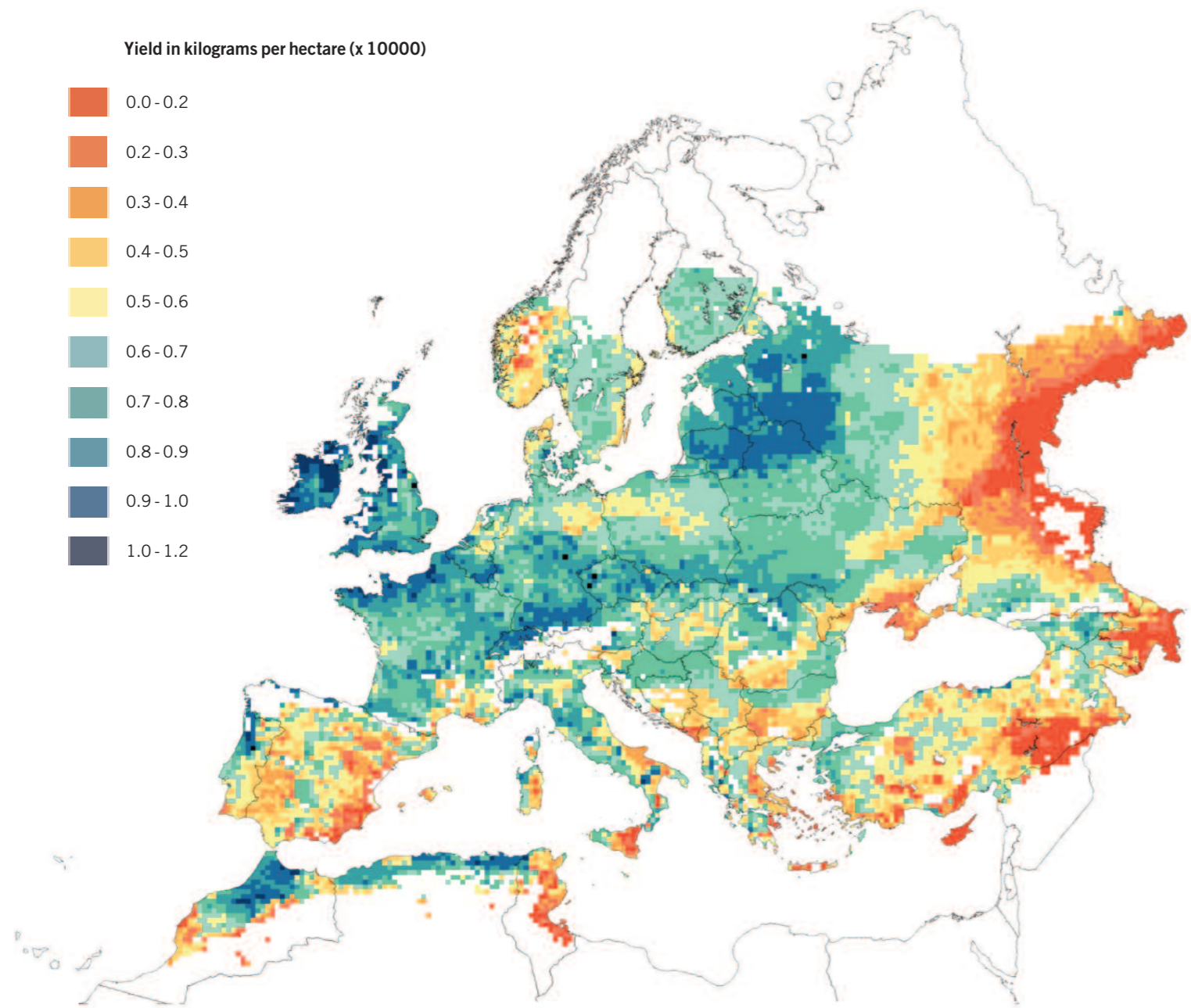
Scaled-up models were also used as the basis for forecasting the actual production in a given year. For this, extra variables had to be input, such as the weather. One of the projects Van Diepen worked on in that context was a system using meteorological data and the emerging techniques of remote sensing as a basis for predicting drought in Africa and its impact on world food production.

This famine *early warning system* was put to the test in Zambia in 1987. The FAO was especially enthusiastic, but the Dutch Directorate-General for Development

Cooperation was not prepared to put money into it. They felt that the system was technology-driven and, moreover, the scientists couldn't answer a question about how it would help improve the position of women and the poorest of the poor. This was Van Diepen's first painful experience of the fact that when you compete for project funding, you should expect unexpected questions.

Fortunately, the Wageningen models had attracted the attention of the European Commission. Year on year, Europe was having to contend with mounting surpluses and increasing price support for farmers, so the Commission wanted to be able to monitor agricultural production in the member states. Van Diepen – who by then was working at the Winand Staring Centre – set to work on this.

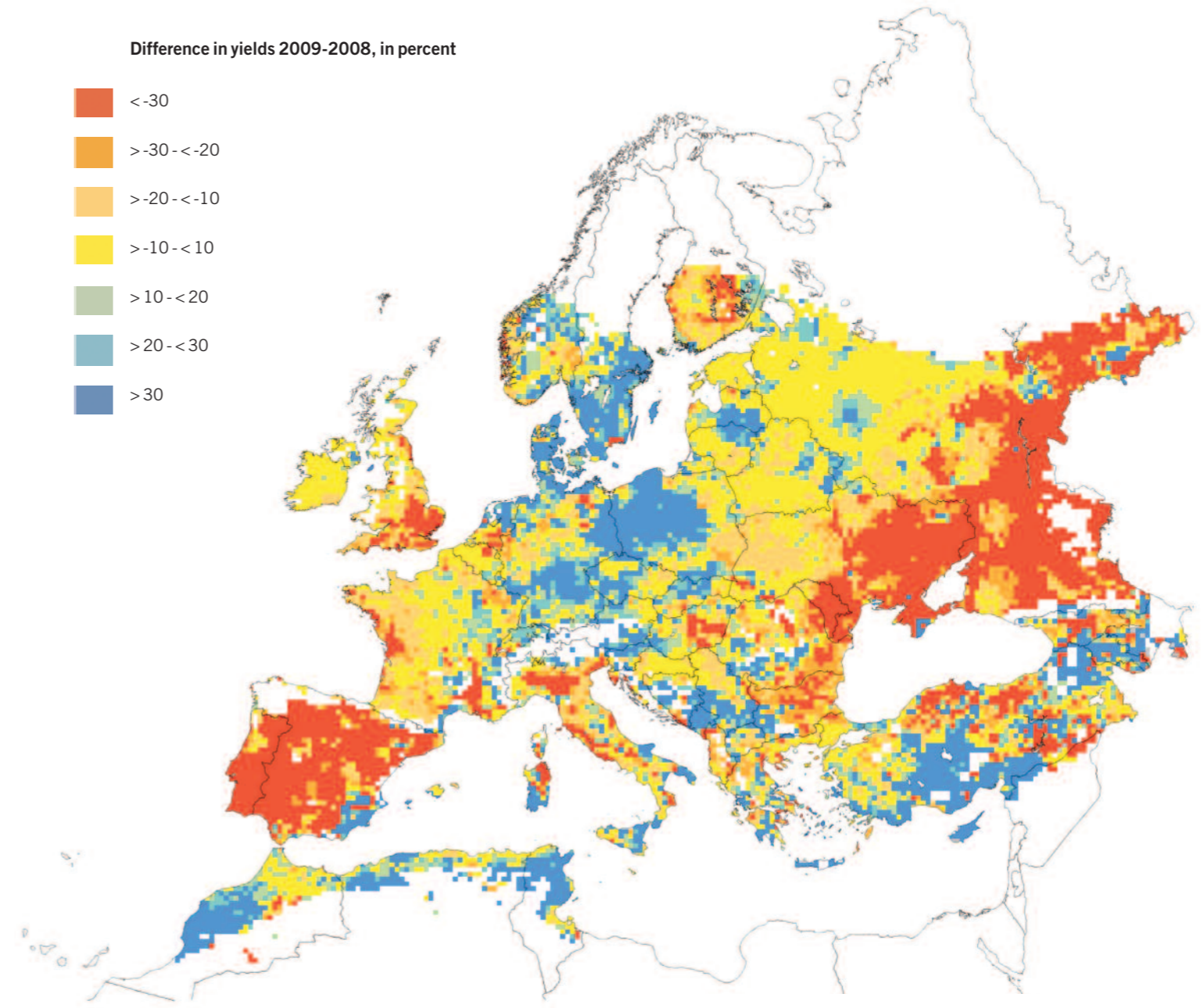
In effect, the system he developed translates meteorological data into crop yields. 'Actually, the system tries to reconstruct agricultural statistics with the help of weather data', he says. Using daily met data such as rainfall, sunshine and temperature, plus statistical correlations from the past (many countries have reasonably reliable data for the last thirty years), the model can predict harvests per region. At the start of the growing year, the predictions made are still very uncertain, but by June they've already become more reliable. Without this system, the first official estimates of the harvest wouldn't appear until March the follo-



Source: European Commission, Joint Research Centre, IPSC, MARS Unit



Sint Jacobiparochie,
Friesland, Netherlands
June 2008



Source: European Commission, Joint Research Centre, IPSC, MARS Unit

Reference yield for winter wheat, mapped using the simulated yields generated by CGMS for wheat grown without irrigation or uptake of groundwater.

< Map of Europe, showing the normal geographical distribution of the long-term mean reference yield for wheat. High simulated yields (negligible effect of drought) occur in agricultural areas with cool, humid climates (green and dark blue), such as the Atlantic coast, higher altitude and east of the Baltic Sea. Low yields (yellow and red) occur in areas with a dry climate and drought-prone soils (sandy and/or shallow soils), such as the strip of land between Berlin and Warsaw where rainfall is low in summer and the soil is sandy. The simulation excludes areas where cereal crops are grown rarely, if at all, such as the Alps and far North.

The map above shows the difference between the reference yields in 2009 and 2008, in percent. Blue indicates that in 2009 the yield was over thirty percent higher than in 2008. In the red areas, the yield is thirty percent or more lower. Yellow indicates a difference of ten percent (higher or lower). The next step, the final official yield estimate, is to statistically analyse even more information and use expert judgment to interpret the result. The wheat simulations can be used for other winter cereals.

Beijing,
China
October 2002



The team in the Huabei-CGMS development cooperation project (CGMS for the North China Plain) at the inaugural meeting in Beijing. The project partners are VITO Belgium, Alterra Netherlands, China Academy of Agricultural Sciences (CAAS) and China Academy of Meteorological Sciences (CAMS). The project focused on knowledge exchange and the application of European harvest prediction techniques in North China using CGMS and remote sensing. Front row, from left to right: Chen Zhongxin, Dong Qinghan, Kees van Diepen, Yanbo He, Shuan Qian; back row, from left to right: Ren Jianqiang, Ma Yuping, Wang Limin, Wang Shili (obscured), Xiao Shenliang and Jia Li.

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wing year.

In 1994, the Crop Growth Monitoring System was ready and was presented to the MARS project of the European Joint Research Centre (JRC) at Ispra in Italy. But after it had been made fully operational there, under European rules there had to be a call for tenders to run it. Van Diepen won the contract. And so, on 12 January 2000, after a short interruption, he resumed the management of the system he'd developed. It was a seven-day week job – a real culture shock. Every day, 300 black and white maps had to be sent to Italy. Over the years, the volume of data increased, but thanks to further computerisation and transmission via internet, efficiency improved.

Running MARSOP (Mars-operational) is not actually research. But quite apart from the turnover – millions of euros – the contract also entails continuous improvements.

Moreover, experience is being acquired in the information techniques needed to handle vast databases like this. MARSOP is currently Alterra's biggest external computer application. This project has put Alterra on the map not just in terms of the know-how required to improve the system and the experience acquired with huge databases, but also for the actual data.

Since 2003, Van Diepen has concentrated on using the system and the information from it for new research: for example, for advising on crops and climate change, and on transferring and applying the system to other countries, such as China, Ukraine and Finland. Sometimes this is difficult, because the system – including the data – is owned by Europe. Permission has to be acquired for every study. Furthermore, much of the work done at Wageningen is credited to JRC and appears under its logo. 'In this case, we're

just a contractor', Van Diepen sighs. In 2008, Alterra and its partners, who include Météoconsult and VITO (the Flemish Institute for Technological Research), obtained a second extension, for a period of six years. The contract is worth about eight million euros and so no counter-funding is needed: everything is paid for by Brussels, on a commercial basis.

Yet Van Diepen still gets nervous about one aspect: the tendering procedure. 'For our first tender in the 1980s we submitted about sixty stencilled pages. They included a 12-line paragraph on finance: that five people would be employed for 55 thousand ECUs per year, plus ten percent for travel and computer expenses and contingencies. A recent proposal we wrote was a massive seven hundred pages of text plus three hundred pages of annexes. That's a thousand pages in total – and we had to submit seven copies. It included a separate financial part describing everything in detail, with hourly rates. Sometimes you have to say precisely how many square metres of office space and meeting rooms you're going to use.

'At a certain moment you know that your client, in our case the JRC in Italy, is going to write an Invitation to Tender. Naturally, you want to know what they're going to ask for, but there are strict rules: you're not allowed to have any contact about this. So you have daily contact about the ongoing work, but not a word is said about the tender. This gives rise to a most unnatural situation, which can last up to a year. In your heart of hearts, you'd really like to influence it, because if they make ridiculous requests, you're saddled with them. And it's risky to suggest alternatives in your tender.

'After the Invitation arrives, you have six weeks to react. But you don't know exactly when it'll arrive. So you go on holiday, but at the back of your mind you know that at any moment you could be summoned back home. In the end, the Invitation arrived in August, so only our Belgian partners had to cut short their holiday. Holiday time is really inconvenient because you need to get all sorts of official stamps and signatures and evidence for the tender, which is difficult when many people are away. Once I had to send someone to Overijssel to get a signature. I was lucky that the person in question wasn't on safari.

'So, it all has to be sorted within six weeks. To start with, you obviously have to make agreements with your partners and put them on record. The annexes are a story in themselves. They range from full details on your research partners and documentation indicating your institute's legal status, to a declaration that your director has never

Kees van Diepen, soil scientist

been in prison, bank guarantees, liquidity demands and a non-bankruptcy declaration. Often, these are things you don't have at your fingertips. The first few times we had to chase up everything ourselves, but fortunately, Alterra now has a dedicated Tender Support Team. What about your own institute and the DLO Foundation? How do you deal with that in notarial acts? Where are the official stamps to be stamped at the end of the form? Or you can't pick up a declaration of good behaviour from the court in Arnhem without a copy of your director's passport and he's gone away and so then you're referred to the Ministry of Justice. And if that doesn't work, you have to request deferment for that detail. It's nerve-wracking work.

'And after a couple of tenders you think it's become routine – but that's dangerous because the rules can change from one year to the next, just like they vary from one directorate to another. So each time you must go through everything very carefully. I remember once three days before a deadline discovering that the substantive proposal should mention no sums of money because the evaluator must be able to judge it purely on its content, without knowing how much it would cost. So then I had work feverishly to split our submission into a technical offer and a financial offer.

'All these details make you nervous that a procedural error will jeopardise your proposal. One mistake and your entire tender will be rejected. Once that nearly happened at the last moment – well, actually, just afterwards. The proposal had to be franked at the post office before a certain time. But it had been sent by a TNT courier and though it had been franked at the post office, that didn't count. It was refused. We were finally able to make it clear that the postmark was valid because in the Netherlands TNT functions like a postal service. Unexpected things like that get the adrenalin racing.

'But there you go. The Brussels procedures are onerous, the thresholds are high and they can find fault with everything, but it is all transparent. You get an evaluation report which says on which points you scored well or poorly. You can't always say that at national level: though there usually are procedures, they're liable to change at the moment they're applied.'

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