

The source of knowledge, naturally Annual report 2005

LOUIS BOLK
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'We look to signals from the sector to put the content into our policy, and that includes from the Louis Bolk Institute. So the term that applies the most to our relationship is flowing together. The driving force behind Louis Bolk Institute's work is its natural power, and it continually seeks cooperation with other institutes. This is one reason why the institute itself and its research is taken much more seriously, even outside of the organic sector.'

**Margreet Hofstede,
sector manager, organic farming at
Ministry of Agriculture, Nature &
Food Quality (LNV)**

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Photos: Michiel Wijnbergh,
Anna de Weerd
Design: Fingerprint
Press: Drukkerij Kerckebosch
This publication can be ordered
under number JV 05

The title of this annual report has a serendipitous double meaning; one, like the roots of a tree, hidden just below the surface. We look to *nature as the source, the wellspring, of knowledge about life*. When we look at the questions our research must answer, we look to what we can learn from life on this planet. But more than that, we want to be a wellspring of knowledge for our target groups: the clients, the professionals working in the field.

The maxim of being a 'The Source of Knowledge, Naturally' is also the source of our working methods. We go out into the field and listen to what the man in the field, the seasoned, hands-on professional, has to say. This gives us new perspectives that inspire us to push on towards groundbreaking, pioneering knowledge.

This annual report takes a look ahead and a look back from this perspective. We show the currents that drive the Louis Bolk Institute in the various aspects of its work, using the analogy of a river: *we go with the flow*, moving with the prevailing currents in the field; but we also *go against the flow* when we see the need for a bold new approach; and finally, we *bring flows together* from different areas in the field, like the confluence of a series of small streams that flow together to become a mighty river. We are a contemporary, modern institution, and we move proactively with the issues of the day. Our research results are, naturally, based on science, even if that seems to go against the established order and conventional knowledge. And when all is said and done, we see how our clients value this.

Louis Bolk Instituut - the source of knowledge, naturally



In 2005, the Louis Bolk Institute strengthened the connections between its internal groups, and the improved synergy between the research disciplines continues to be observed as the common core values of each discipline become more apparent. Operational changes bore fruit in 2005, as we saw our results increase even as our costs fell. This positive result can be applied towards areas such as fundamental research and the move to our new building.

So in 2006, we can go on tapping new sources of knowledge. Discovering new interconnections. Learning from nature, together with our partners in the field.

Bas Pedroli, chairman, Louis Bolk Institute Foundation

'The Louis Bolk Institute has a large (international) network within the research side of organic agriculture, and is considered an important strategic partner by the international policy-makers and agenda-setters (EU). Wageningen UR has a strong network within conventional and organic agriculture, and is one of the leading agricultural institutions in the world, as well as being author of a number of major European projects. The Louis Bolk Institute and Wageningen UR approach the issues in organic agriculture in different ways. This is expressed in the choice of working methods, as well as in the way the research questions are identified and formulated. Various projects conducted in cooperation have shown that we can generate added value by working together, each from their own strength.'

Aalt Dijkhuizen,
chairman of the board, Wageningen
University & Research Centre

A Louis Bolk Institute with a better focus on the outside world. An institute that had to cut costs in 2005, but still managed to grow as the against-the-flow player in the dialogue on sustainability, health and biodiversity. And an institute that more and more finds itself in the director's chair in bringing together the flows of research and field work. Director Koen van der Drift explains how the institute became more 'practically wise' in 2005.

'Internally, our organisation has made enormous strides in efficiency. We turned the Louis Bolk Institute around financially healthy in the space of one year. We made significant cuts in the general costs. We outsourced everything that could be outsourced. We also took great pains in learning to cope with our project time. You could say that we are doing our work much more like a business now,' Van der Drift concludes.

Koen van der Drift, director Louis Bolk Instituut:

Three core values At the same time, the Louis Bolk Institute has significantly raised its profile as a partner in the discussion of the issues facing society today. 'Together, we have brought our three core values out in our actions externally. Our first core value is thinking and acting holistically. We do not jump feet first into the problem, but we take time to look at the big picture. We investigate complex relationships and attempt to bridge opposite extremes in perspectives. The second core value is consciousness raising: training yourself and teaching others to look at things with increased awareness, to look behind the measurable. The third is respect for the integrity of life. The natural quality is an important moral value for us, which comes out in things like thinking in terms of life processes.'

Practical wisdom 'Bolk' has set itself the mission of propagating these core values. 'Our actions answer to these core values, but we want others to feel this, too,' says Van der Drift. 'Firstly, the people we are doing research for. So, we go out into the field with farmers and look at what's driving them. We see the farmer as a hands-on scientist. Let the farmer explain what his experience of a problem is, what he has done about it and how that worked out. This is the practical wisdom that the Louis Bolk Institute strives to draw on and to feed back into its own work. On the one hand, we go with the flow, because our research must, of course, have a scientific basis. But this practical wisdom often sets us off against the conventional scientific flow, too. This emphasises

our 'difference.' For example, we never have the soil samples we work with delivered. Our researchers go out into the field with the farmer; they want to hear and see for themselves. And: a farmer doesn't care about a scientific article in an academic journal, he wants to see solutions being implemented. And that is an example of practical wisdom.'

Proving ground Another important development in 2005 has been the interaction between organic and sustainable. 'Organic agriculture has become the proving ground for increasing the sustainability of conventional

Bolk Institute has manifested itself well as the 'Source of Knowledge, Naturally.' 'We always try to establish links between what nature teaches us and the issues facing society today,' explains Van der Drift. 'We can learn a lot about sustainable production just from looking at nature and life. Sometimes a subject that we have been doing research on for years suddenly falls into place in that discussion. The milk study that we presented in 2005 at the EKO conference, on the comparison between organic and conventional milk, is a good example. That fits in perfectly with the growing attention to the relationship between nutrition and health.'

'Practical wisdom is our USP'

agriculture,' says Van der Drift. 'The fruit of our labour in organic agriculture is a high level of esteem in the world of conventional agriculture.'

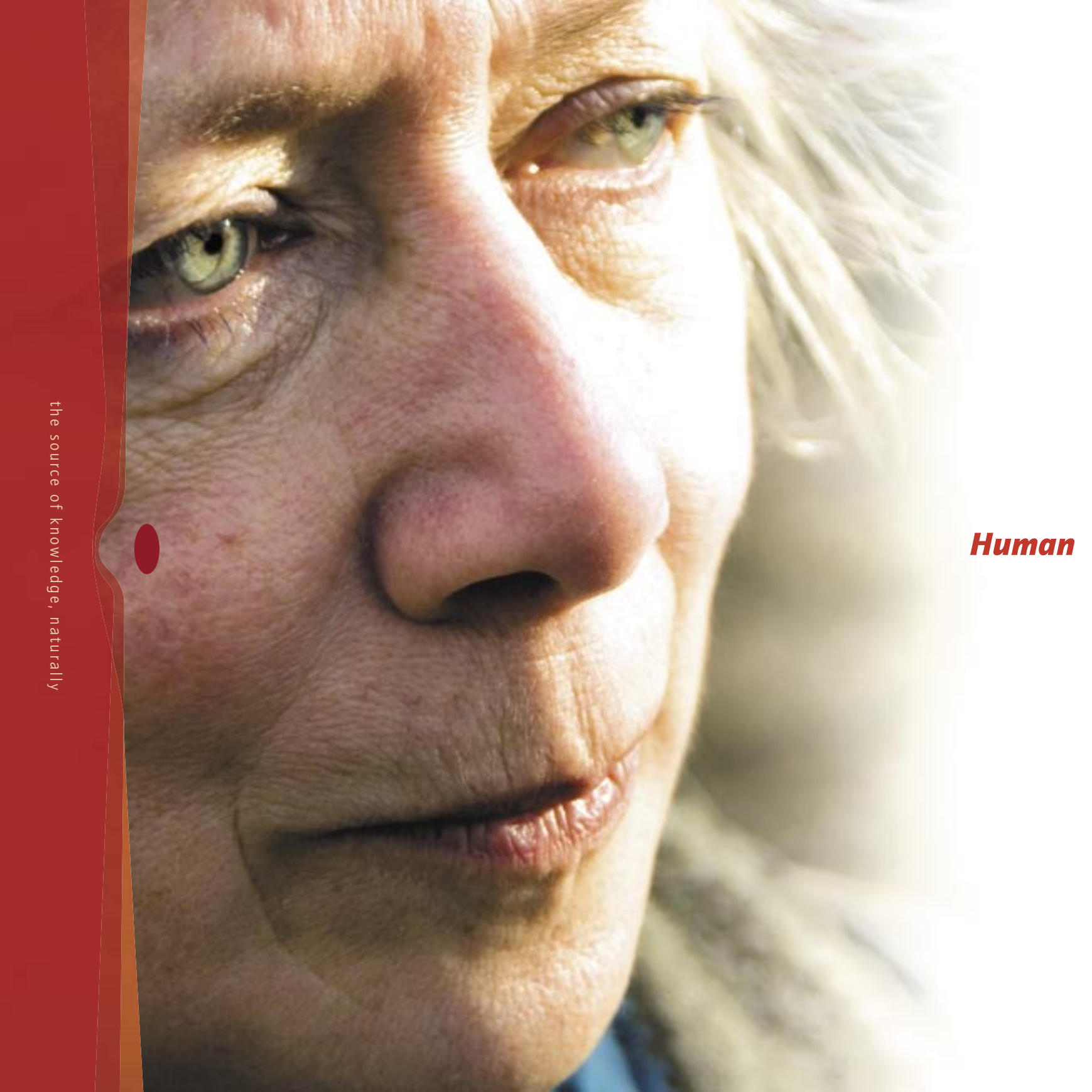
As an example, the director refers to the Skylark project, also known as the 'Heineken project' (after the client). This project began as a study of sustainable barley growing, but has since morphed into a project on sustainable operations and soil management. The project is also a good example of the high regard the Louis Bolk Institute's concept development holds. 'That is our core business. We envision new concepts for ongoing problems. We are good at bringing together various scientific disciplines and exposing them to the problems. Because of our broad working method (call it holistic or multidisciplinary), we are often asked to partner in the research of other research institutions. We are a member of a research institution network. We prefer to take on the lead role in bringing these flows together. Working together with people in the field and other researchers demands precision project management. But room for creativity as well.'

Themes for 2006 Van der Drift predicts that animal welfare will become a major research theme in the coming years: For example, looking into production methods that also validate the animal's existence.

Sustainability, health and animal welfare are expected to be the three main themes for 2006. To these, 'Europe' might well be added. Clients are becoming more and more international. 'So the Louis Bolk Institute will also begin orienting itself more internationally,' says Van der Drift. 'We have already participated in a number of EU research projects, and we want to use our expertise to take on a more leading role in those projects in the coming years.'

Nutrition and health Within the issues facing society in 2005 (attention to nutrition & health, sustainability and biodiversity), the Louis





Human

the source of knowledge, naturally

An obvious Source of Knowledge, Naturally is the 'expert in the field.' A farmer or therapist who, after ten years, knows exactly what to do (whether consciously or intuitively). The grower's eye, the clinical perspective. You can take this hands-on knowledge and turn it into science. A concept with a healthy dose of going against the flow, says Erik Baars, Head of Department Healthcare & Nutrition.

'The hands-on knowledge of individuals plays a growing role within the health care sector,' says Baars. 'So as far as that, we are going with the flow with our approach. But we go one step further. We take that hands-on knowledge and turn it into hands-on science. And that is something unconventional. Because science is usually something abstract and theoretical. And something developed with large-scale experiments. We feel that the personal, practical knowledge of a farmer or doctor should have

health in a very different way,' explains Baars. 'Conventional science simply adds up how many harmful particles are found and compares that to a baseline. We, on the other hand, look beyond that, to the inner quality, vitality and originality of a nutritional product. We see quality as a holistic concept, we look at processes instead of substances. So when we evaluate quality, it's of the whole.'

Organically healthier Another important project initiated in 2005 is *Biologisch gezonder* ('Organically healthier'). 'In this project,' says Baars, 'we look at whether chickens that are fed the optimal organic feed develop differently than chickens receiving conventional feed. Does organic feed have an effect on autoimmune functions in chickens? This is a major study in

mechanism. So, you have to think about things like how you can get through childhood ailments in a healthy way. Should you really always reach for a pill to make a fever go away? Our concept is a basis that we can further develop in the coming years. We want to create a scientific foundation for the promotion of health, and to use that framework within the current health care system in addition to curing diseases.' In 2006, the Department Healthcare & Nutrition began an empirical review of its health theory. It began developing assessment tools for determining degrees of health.

- A better look with the hands-on scientist

a place in science. Individuals, too, are very capable of producing valid and useable knowledge.'

The hands-on science is focused on further developing the individual critical thinking capacity of the doctor or farmer. 'This way, we let the science and the practice flow together,' says Baars.

Quality and health Two important research areas the Department Healthcare & Nutrition is involved in are the quality of nutritional products and their effect on human and animal health. With the report *Biologische producten en gezondheid* ('Organic products and health'), the Louis Bolk Institute is breaking new ground in the relationship between organically grown nutritional products and human and animal health. The study compares the products of organic growers with those of their conventional counterparts. 'The main thing we show in the report is that we look at quality and

which, apart from taking on a lead role, our job is also to "bringing flows together" from a number of different streams. Specifically, in this project we work with a number of fellow research institutes, including Wageningen UR. We hope to be able to present the first results in 2007.'

Health through self-regulation

One development observed in society in 2005 is a trend for consumers to devote more attention to health issues. The Louis Bolk Institute effectively anticipated this development with its presentation of a concept entitled 'Health through self-regulation.' 'A clear, innovative theory on what health actually is,' says Erik Baars. 'Health is not the same thing as the absence of disease. The autoimmune system, for example, needs to be able to develop into a self-regulating

'For me, the Source of Knowledge, Naturally means a person's creative power that allows him to make autonomous choices. This lust for life gives vitality and a sense of quality of life. I want my research partners to also recognise this essential source. Because if they don't, we can't find the right language and develop the necessary assessment tools. I have found this research partner in the Louis Bolk Institute.'

**Hanneke Wetzel (photo),
psycho-social aid worker at
Widar Health Centre**



This list gives an overview of reports published by the Louis Bolk Institute in 2005, articles in specialist journals in the Netherlands and elsewhere, conference papers, proceedings and the like. A number of these publications can be ordered and/ or downloaded from our website: www.louisbolk.nl/publications.

Publications 2005>

Commissioning bodies and partners in cooperation in 2005>

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'The Louis Bolk Institute has what it takes to go against the established order. It dares to be different. As one example, the Louis Bolk Institute was the driving force behind legislation on keeping beaked chickens.

And I myself, as organic poultry layer farmer, see a lot of practical benefits from that.'

Leo Coumans,
organic poultry layer farmer



Animal

the source of knowledge, naturally

When the Louis Bolk Institute's Department Animal Production keys into contemporary issues facing society and demands from the market, it is going with the flow. But by choosing innovative, revolutionary projects, it sets out on a bold new course against the flow. In its approach to these projects, the section channels these flows together with those of creative researchers in the field, while in certain elements it can also work well together with fellow researchers from the WUR.

Head of Department Jan de Wit says that 'Animal Production' wants to be the Source of Knowledge, Naturally in three sub-areas: organic animal husbandry, animal welfare and the development of mixed crops with grass/clover. Improving resistance is the common theme covering all three of these areas. But unlike the mainstream, which continues to think in terms of keeping infectious germs out, the Louis Bolk Institute is exploring natural systems and their effects on animal immunity.

Keeping the calf with the cow One example of this type of natural system is the project *Kalveren bij de koe* ('Calves with the cow'). This is a breeding method in which the natural bond between calf and mother cow is given back a key role. 'This is at odds with all of conventional dairy farming practice, which is geared towards taking the calf away right after birth,' says De Wit. 'But having said that, this project is going with the flow. Because animal welfare is becoming a more and more important issue being discussed in society. These days, farmers are being asked directly by children and consumers why that calf has to be taken away. And they have to answer that question themselves.'

- Swimming upstream in search of natural systems

In 2005, the Louis Bolk Institute determined that the most significant objections against this alternative animal husbandry system could be resolved. 'In 2006, we will be investigating what the actual costs and revenues of the system are. That will initially cost some milk production; that's a given. But the calves grow better, and their resistance may also be better. Now is the time to bring these things out with our research.'

Beneficial partner crops The *Partnergewas* ('Partner crops') project, launched in 2005, seeks alternatives for the cultivation of green maize (fodder). Normally this type of cultivation means a considerable loss of fertilizer. 'We are looking for a system to significantly reduce this loss, and one that saves money in the process,' says De Wit. 'The direction we have taken in this study is instead of

sowing the maize on ploughed land, to sow it among an existing crop like clover (trefoil) or grass/clover. The preliminary results are promising. In 2006, we hope to know more about what, if any, competition the grass and the maize will produce.'

De Wit calls this a revolutionary system that is an answer to the societal issue concerning the reduction of fertilizers. 'A good example of how our systems really do go against the flow. But we do that with like-minded people in the field, and where the discussion goes, we follow.'

The search for quality organic milk

The Department Animal Production also follows demands from the market. 2005 saw the results of a market-oriented study into milk quality, performed in collaboration with cheese processor Aurora. Aurora has now begun marketing an organic cheese, and this cheese is guaranteed to contain more healthy fatty acids. 'The product is doing well, but healthy fatty acids as the only distinction between organic and conventional milk is a flimsy sales argument for the long term,' De Wit acknowledges. 'So we are looking for other distinguishing quality features of organic milk. That means we are making the follow-up project broader.'

Seeing the flows unite

The trend towards uniting flows is evidenced even more by the Department's strive to produce publications that can be used in practice in the field. One such publication is *Jong geleerd* is oud gedaan, on breeding

egg hens for alternative systems. 'This encompasses a clear connection between theory and practical experiences,' says De Wit. 'It is by definition a publication written for practical use. And it's about poultry and welfare, an area in which the Louis Bolk Institute is very strong and will continue to grow.' Animal welfare (that is, looking for production methods that also validate the animal's existence) looks set to become the fastest-growing discussion theme in the coming years. 'As one example, right at the end of 2004 a German handbook was published that included two chapters by Monique Bestman on raising beaked chickens. This section will also be released in a French translation in early 2006. In short, even internationally we have irons in all kinds of

Soil & Plant - Scientific observation through the eye of the grower



Interest in sustainability, GM-free production and soil biodiversity

were three important social themes of which the Department Soil & Plant was part of the flow in 2005.

Despite this, for this department, 2005 was largely characterised by bringing flows together. Uniting flows from the field. Many projects are based on what the grower observes and what the grower considers important.

If nothing else, the fact that a major commercial party is the client for one of the Louis Bolk Institute's most important projects proves that attention to sustainable agriculture and sustainable soil use is on the rise. Sometimes referred to as the 'Heineken project,' that project is *Skylark: a search for sustainable arable farming*.

The project was completed in 2005. 'The growers themselves were asked how much more sustainably they believed they could now produce,' says head of department Chris Koopmans. 'Where they want to be in twenty years and what they have to do now to get there.'

Together with growers, the department is pursuing activities in sustainability, starting with soil observations and going from there. 'We are going with the flow, in the sense that there seems to be a large interest in sustainable growing among conventional growers,' says Koopmans. 'In 2006, we will be expanding this project from ten to 16 growers. After that we will start getting the processing industry involved.'

Another way to do it Bringing flows together is also the motto within the projects *BBB (Bodem, bedrijf & biodiversiteit* ('Soil, business and biodiversity')) and *Biokas*. The former project investigates the degree to which practical measures can be utilized to control soil biodiversity.

Both projects involve cooperation with conventional research institutes: in BBB, with the National Institute of Public Health and the Environment (RIVM), and in Biokas, with PPO and DLV. 'With our supplemental contribution from an organic perspective, we show not only that there's another way, but also how to do it,' says Koopmans. 'Our added value lies in our link with the people in the field. We know what the questions are and how the organic sector would do things like fertilize.'

Farmers set agenda In *Participatieve Plantenveredeling* ('Participatory Plant Breeding'), the farmer takes the lead. This project works with growers who select certain varieties, such as onion. 'The underlying idea is that farmers set the agenda for improving the varieties,' explains Koopmans. 'We are right there looking over the grower's shoulder. What we actually want to discover is whether organic growers work with a broader plant health concept. What differences are there between the practice and the commercial breeders? We try to bring out what the grower himself feels is important.'

Koopmans expects that this project will play a major role in 2006. 'Then, it will become clear in which way the growers complete the breeder's eye.'

Alternative strategies Another study in which the Louis Bolk Institute flows together with a fellow research institute and augments that institute's conventional approach is the *Programma Biologische Resistentieveredeling* (Organic Resistance Breeding Programme). Soil & Plant is collaborating with PRI Wageningen on thrips resistance in cabbage and the prevention of fusarium in wheat. 'PRI is primarily looking for specific resistance genes,' says Koopmans. 'We, in turn, are also looking into morphological characteristics. What does the crop look like and what can you learn from that? Do these characteristics influence plant health?'

Koopmans says that these are two very different perspectives on the approach to a problem. 'Our goal is to broaden knowledge. Not only focus on resistance, but to also develop strategies to adapt species to the present. Our message is that we, as scientists, have an obligation to pursue multiple strategies. The goal is to develop new concepts for practical application. This brings together the flows of the scientists and the farmers.'



'Healthy soil for sustainable food production. In the end, that's what it's all about! This is why I worked with the Skylark project. A project with sustainable farming as its central focus. A very topical subject in conventional farming. The Louis Bolk Institute takes advantage of this actively and proactively.'

Gerrit Klaasse Bos,
arable farmer

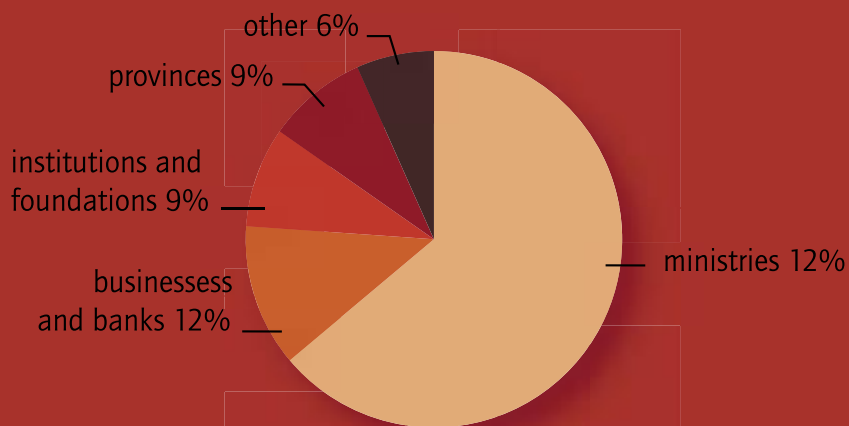


Statement of operations
(x€ 1.000)


	budget 2006	account 2005	budget 2005	account 2004
Revenues				
project revenues	3.424	3.431	2.942	3.258
donations	70	43	100	70
various revenues		19		19
total revenues	3.494	3.493	3.042	3.347
Expenditure				
labour costs	1.778	1.621	1.503	1.783
housing	135	134	145	134
general costs	272	276	299	257
non-staff project costs	998	1.077	846	1.086
total expenditure	3.183	3.108	2.793	3.260
Result from normal business operations	311	385	249	87
Extraordinary result				
provision expected losses on projects		-25		-62
Total result	311	360	249	25

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Ir A.C. (Kees) van der Linden, member
Drs H.J. (Hanno) Niemeijer, member
Dr.sc. J.D. (Jan Diek) Van Mansvelt,
honorary president



Distribution of the revenues in terms of percentage, according to type of financier



'The Louis Bolk Institute makes a clear choice in the development of its own identity. I would describe that identity as daring and bold. Research in organic farming is just beginning to take root. So being daring and speaking your mind are essential for making headway in this new field. The Louis Bolk Institute is, for example, as a knowledge institute, not only concerned with what happened yesterday, but even more concerned with tomorrow and the next day. And as chairman of Biologica, this is what I'm interested in.'

Arie van den Brand,
chairman, Platform Biologica

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