

## HOW ENVIRONMENTAL PROBLEMS ARE ADDRESSED TO FARMERS - PYRAMID MODEL, RESEARCH, KNOWLEDGE EXCHANGE, PRACTICES AND ATTITUDES

**K. de Grip, A. Kuipers, P. J. Galama**

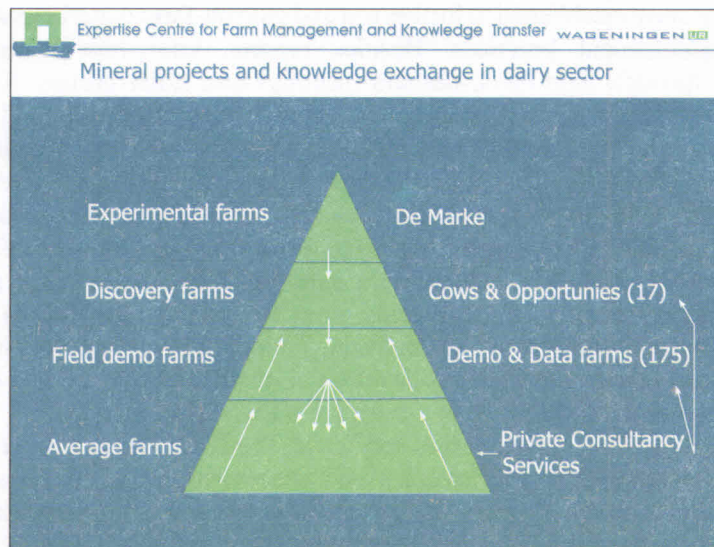
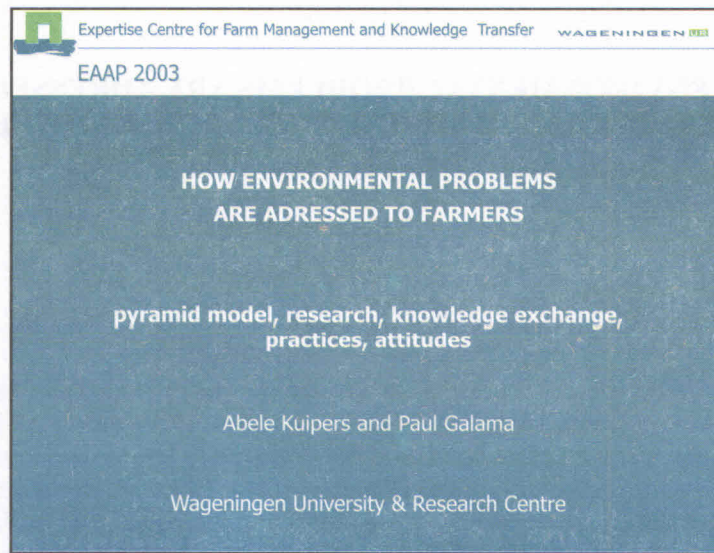
In the 1990's the public extension service was privatised. The Ministry of Agriculture continued to support extension activities in areas such as environment and nature management. A pyramid model shows the know-how development and transfer of environmental activities in the dairy sector. From top to bottom we find research farm(s), discovery farms, demo-farms and the large group of "average" farms. As research farm, The Marke was founded in 1990, where management practices were examined to diminish mineral losses. Later, 17 discovery and 175 demo-farms were established to further test and gain on-farm experiences with the various management practices. Besides reports, know-how transfer was performed through field days, farmers meetings and study-groups. Keywords appeared to be clear goals, farmer-to-farmer exchange, objectivity and an open attitude. However, studies indicated that these activities were not enough to reach the "average" farmers sufficiently. A Mineral-management Liaison Service was set up in 2002 to stimulate knowledge exchange and to experiment with demand driven extension. 80.000 farmers could request a free voucher worth € 250,- to buy a knowledge product, which were exposed in the 'knowledge shop' on website. Farmers could also join a study group to articulate their needs together and buy a 'knowledge product' collectively. Trained farmers co-ordinated these groups. The Liaison Service also develops a quality system by use of client satisfaction studies to contribute to a transparent knowledge market.

In the late 1980's, the extension service in The Netherlands was privatized. Part of the services were taken over by feed companies and private consultancy agencies. However, the Ministry of Agriculture continued to support extension in area's of public interest, such as environment and food safety.

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We want to illustrate in our contribution the structure in which public budget is devoted to environmental (mineral) issues. This is an area of utmost importance in our country.

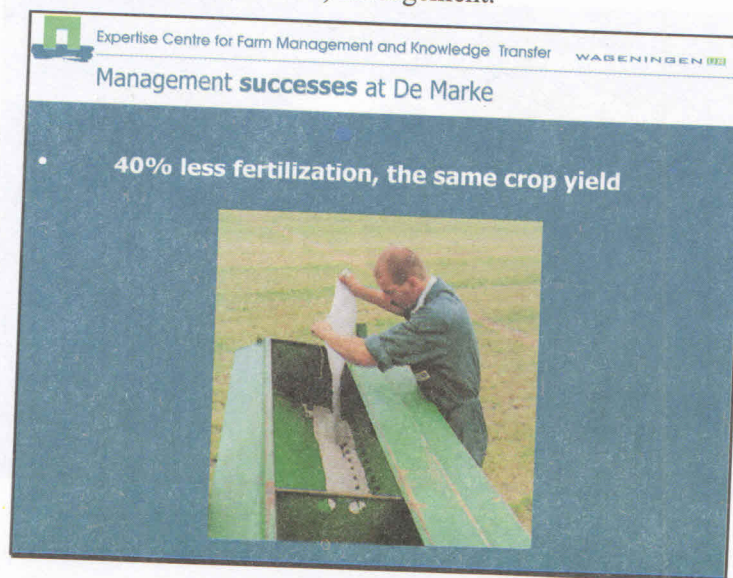
The structure can be pictured by a pyramid (see figure).



The philosophy behind this structure is:  
implement and demonstrate research findings at farms;  
let farmers tell farmers the news about topics, like environment.



De Marke environmental farm was built in 1990 to enhance practical knowledge about mineral (nutrient) management.



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Management **successes** at De Marke


- **Grass under maize**



Expertise Centre for Farm Management and Knowledge Transfer **WAGENINGEN**

Management **successes** at De Marke

- **15 % crude protein is sufficient**





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### Management failures at De Marke


- Siesta grazing to laboreus



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### Management failures at De Marke

- Closed sloping floor too slippery

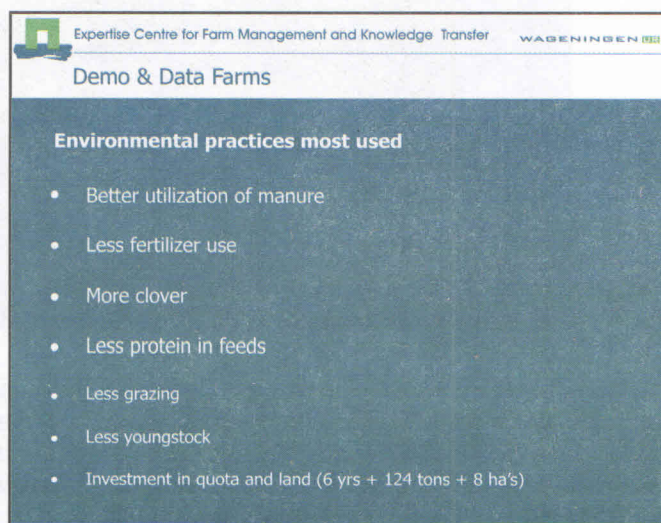


The Discovery Farms, (named the Cows & Opportunities project) were set up to test and spread the know-how about mineral management gathered at De Marke and other research farms. The research goal at the discovery farms was to reach within 3-years the EU-environmental targets. This was an obligatory goal to the farmers.

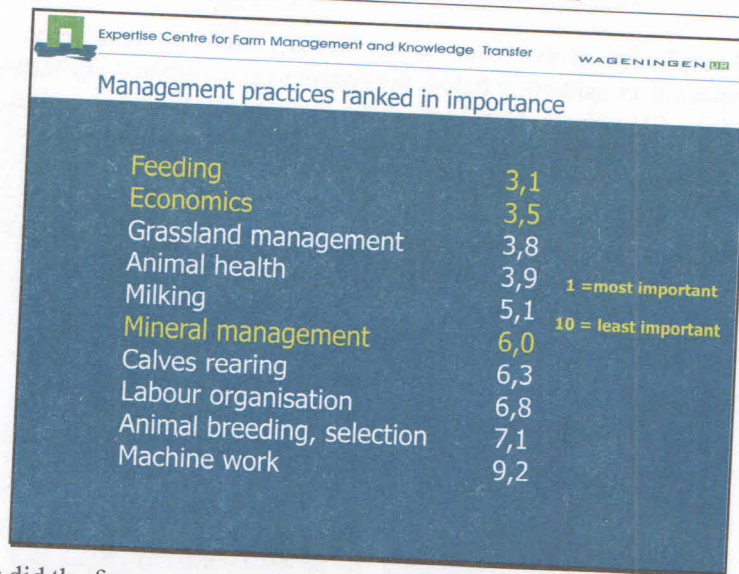


The 17 dairy farms were spread over the country and over soil types

The Demo & Data Farms also tried to bridge the gap between the experimental and commercial average dairy farms. These farmers were requested to try to reach the environmental targets. It was not a must to reach these targets. Guidance was less intensive than at the discovery farms. It were 175 dairy farms.

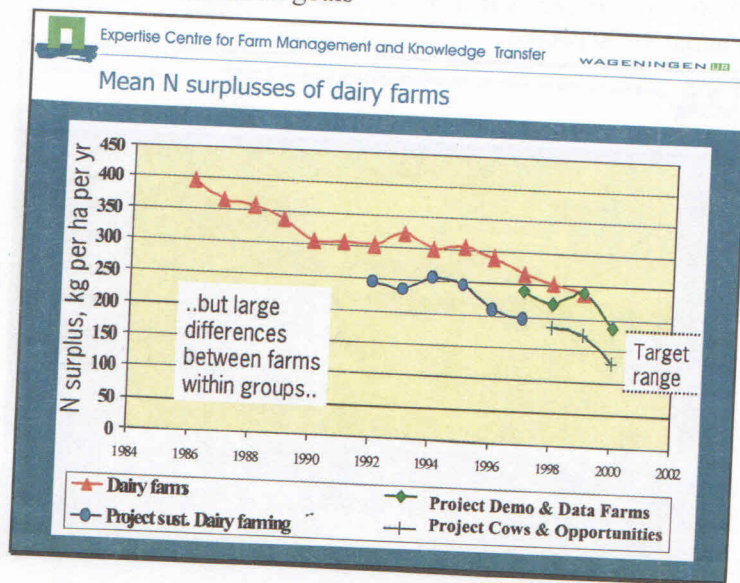




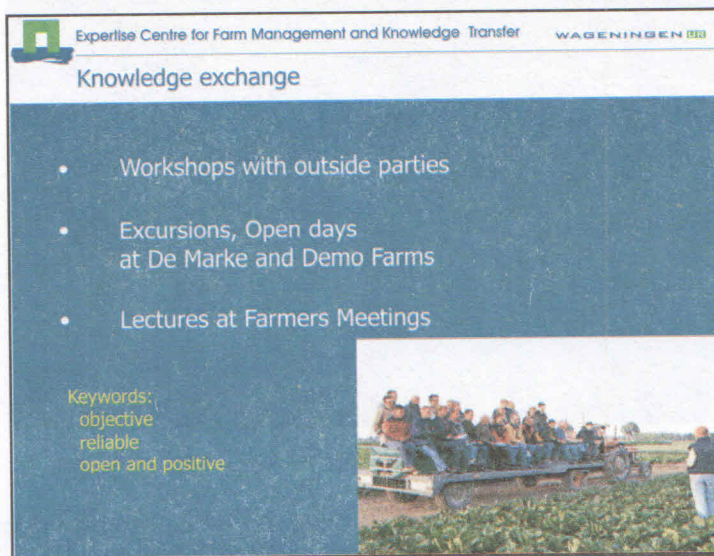


How did the farmers experience to participate in these projects:

- They are proud to be a front runner
- They profit from interaction with research institutes and the extension service
- They love to have colleague farmers visiting their farms
- They received criticism from colleague farmers about helping the government to reach the environmental goals



The N-surpluses of the front runner farms (discovery and demo- farms) were, as expected, considerably below the commercial average dairy farms. They approached the EU-targets. But: large differences between farms within groups existed.




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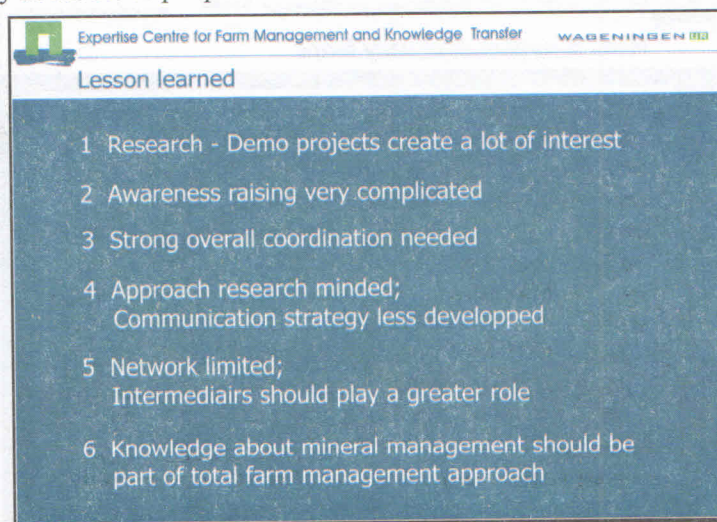
### Knowledge exchange

- Workshops with outside parties
- Excursions, Open days at De Marke and Demo Farms
- Lectures at Farmers Meetings

Keywords:  
objective  
reliable  
open and positive



Workshops were organised to discuss plans and results with outside parties like government officials, feed companies and water quality agencies. De Marke received 3.800 visitors per year. The 175 Demo & Data Farms were last 3 years visited by about 8.700 people.



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### Lesson learned

- 1 Research - Demo projects create a lot of interest
- 2 Awareness raising very complicated
- 3 Strong overall coordination needed
- 4 Approach research minded;  
Communication strategy less developed
- 5 Network limited;  
Intermediaries should play a greater role
- 6 Knowledge about mineral management should be part of total farm management approach

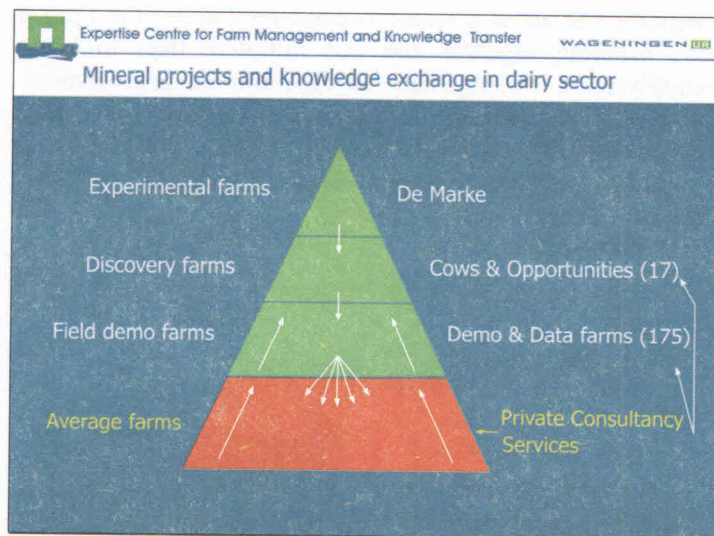


Last winter, lectures were given at meetings which were visited by a total of 1.500 farmers, (concept of meeting: a demo farmer tells the story)

As conclusion, I like to present some lessons learned.

But first I want to emphasize:

Please, realize that this structure of knowledge exchange is only used for the environmental theme in our country. It may be considered as an experiment. The pyramid model has its restrictions.



But still: the large group of commercial average dairy farms was not enough reached.

Karin de Grip will continue to tell about a project that was set up to reach more intensively the large group of commercial farms.

**An experiment to exchange  
knowledge with the large group of  
farmers**

**The case of the Liaison Service**

**Karin de Grip**

**Communication & Innovation Studies**

**Wageningen University**

This research was conducted by Karin de Grip and Cees Leeuwis, with contributions of Laurens Klerkx from the Department of Communication & Innovation Studies of Wageningen University.

*The question is: how to deal with knowledge exchange with the large group of farmers?*

The presentation is about a research conducted about the Liaison Service. Liaison mean bringing together and this initiative tries to bring together knowledge supply and knowledge demand about mineral management.

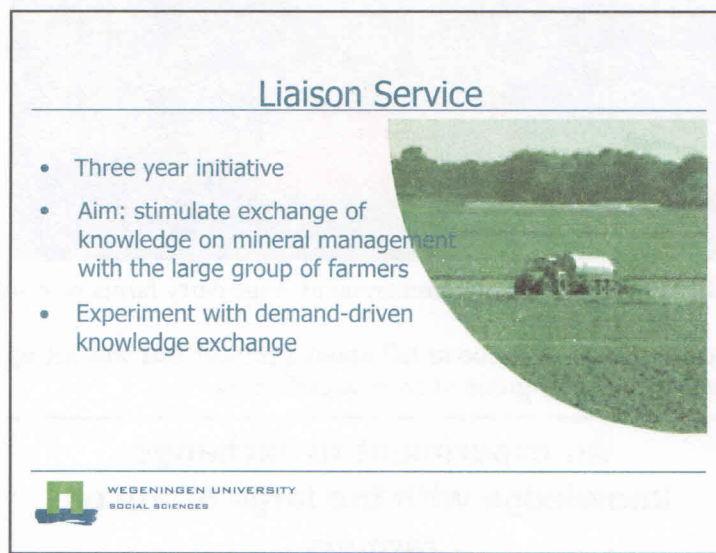
In this presentation, attention will be paid to:

A short description of the Liaison Service;

The research questions which were guiding our research;

The most interesting findings;

Short reflection and conclusion.



The slide features a title 'Liaison Service' at the top. Below the title is a list of three bullet points: 'Three year initiative', 'Aim: stimulate exchange of knowledge on mineral management with the large group of farmers', and 'Experiment with demand-driven knowledge exchange'. To the right of the text is a photograph of a green tractor in a field. At the bottom left is the logo for Wageningen University Social Sciences, which consists of a stylized 'W' and 'U' in green and blue.

The Liaison Service is a three year initiative, and became operational in 2002. The Ministry of Agriculture is financing this initiative with a budget of € 25 million. They looked for an independent organisation to execute this.

The main aim of the initiative is to exchange knowledge on mineral management with the large group of farmers.

At the same time, there was the request of the Ministry to organise knowledge exchange differently and experiment with demand-driven knowledge



exchange. The idea behind the Liaison Service was to give money to be used for knowledge exchange activities directly to the end-users. In this case farmers could receive a voucher to spend in a kind of knowledge shop.

### The elements of the Liaison Service

- Vouchers scheme
- Quality system
- Study-groups and study-group coordinators
- Knowledge shop



The Liaison Service has four main activities which were set up to bring together the knowledge demands of farmers and the knowledge supply of knowledge suppliers. These are considered as four elements which were studied in the research:

The first element is a voucher. Farmers could request a voucher of € 250. This is a kind of coupon, or artificial money, which gave them purchasing power to buy a 'knowledge' product. There were different kind of knowledge products, such as individual advice, supporting software, studygroup activities, courses on mineral management, excursions, and books.

The second element was a quality system. This system was set up to come to a selection of knowledge products for the 'knowledge shop'. A board of experts used certain criteria for this selection. Client satisfaction studies were also part of the quality system. In this way the quality of knowledge products ought to be guaranteed.

The third element were new farmer studygroups. These studygroups were coordinated by farmers, who were trained by the Liaison Service to be a studygroupcoordinator. The idea was that these coordinators could guide the group to get knowledge demands clear. Then, the group of farmers could spend their vouchers together. More efficient, more effective, was the idea. Also


existing studygroups could apply for a groupvoucher, which they could spend on a knowledge product.

The fourth and last element was the knowledge shop. This shop was developed to increase transparency of knowledge products and allow farmers to compare knowledge products. A website and leaflet were used as media for the creation of a knowledge shop.

Research questions

1. To what extent do different parties recognise the aims of the Liaison Service?
2. To what extent do the elements of the Liaison Service support a demand driven knowledge exchange?
3. Is there a future role for an Independent Service like the Liaison Service?

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Three research questions were formulated, to guide the research:

1. To what extent do different parties recognise the aims of the Liaison Service?
2. To what extent do the elements [voucher, quality system, studygroups, knowledgeshop] of the Liaison Service support demand driven knowledge exchange?
3. Is there a future role for an Independent Service like the Liaison Service?

As a methodology in-depth semi-structured face-to-face interviews and structured telephone interviews were used among knowledge suppliers, studygroup coordinators, farmers, government agents and projectteam members.

Participant observation was also conducted during various studygroup meetings, seminars and projectteam meetings.

Some general quantitative findings about the elements of the Liaison Service are the following.



## Findings (1)

- Target group: 80.000 agrarians



### Results

- 35.500 vouchers distributed
- 23.600 vouchers spent
- 53 coordinators start 161 new studygroups
- 850 existing studygroups spent groupvouchers

The target group of the Liaison Service is the 80.000 farmers and horticulturists in the Netherlands who are obliged to use the mineral management administration system (MINAS). These farmers and horticulturist could request a voucher from the Liaison Service.

The following results were achieved:

35.500 vouchers distributed to farmers

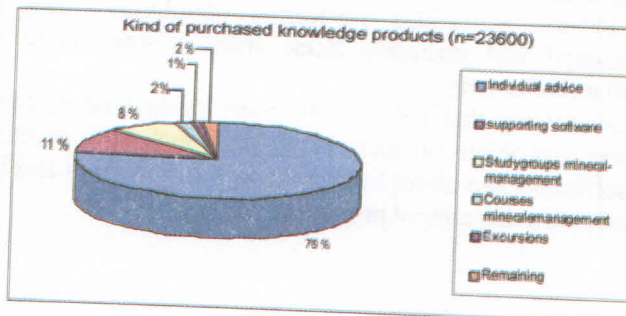
23.600 vouchers spent by farmers

53 studygroup coordinators started 161 studygroups

850 existing studygroup requested and spent groupvouchers

## Findings (2)

Kind of purchased knowledge products (n=23600)



Accordingly, it became clear that most of the vouchers are spent on individual advice, namely 76% (= about 18000). Another 11% (= 2600) is spent on supporting software, 8% (1900) on the specially set up studygroup programs about mineral management. And a small part of the vouchers is spent on regular studygroup programs, excursions, and books.

### Findings (3)

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- Aims of the Liaison Service only partly recognised

#### **Vouchers**

- Network around farmers becomes activated, indirectly farmers
  - Vouchers perceived as a financial incentive
  - Farmers don't seem to have an autonomous or clearly articulated demand
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Continuing with some more qualitative findings it was found that only parties closely related to the Liaison Service (such as projectteam, knowledge supplier, studygroupcoordinators) were familiar with the aims of the Service. The target group (farmers and horticulturists) did not really have an idea what the Liaison Service tried to establish. Of course, they received the information about the vouchers, but the whole idea that farmers should consciously think of their knowledge demand and critically think about a knowledge product was unfamiliar with most farmers.

It is also interesting that 85% of the interviewed farmers (n=39), did not perceive a mineral problem on their farm. More than 50% of the respondents (n=33) were self-confident about having enough information and knowledge to handle their mineral management properly.

#### *Vouchers*

About the first element of the Liaison Services, the vouchers, it was found that vouchers mainly activated the existing network around farmers, and only indirectly the farmers themselves. Many knowledge supplier informed their



regular clients about the vouchers, and the opportunity to spend the vouchers with them. About 80% of the vouchers were spent in existing and familiar relationships between farmers and knowledge suppliers.

It also became clear that vouchers were mainly perceived as financial incentives. About 40% of the interviewed farmers indicated that vouchers were useful because it gave a reduction on their existing post for extension and advisory costs.

The findings also showed that farmers hardly had a clear, well articulated demand for knowledge about mineral-management. Farmers seem to perceive mineral management as an integrated part of the daily farm management activities.

A last finding about the vouchers is that it caused enormous administrative and bureaucratic procedures, especially for knowledge suppliers.

### Findings (4)


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**Quality system**

- Quality of knowledge products partly increased
- Farmers satisfied about knowledge products
- Information on quality knowledge product hardly considered important

**Formation of study groups & study-group coordinators**

- Demand articulation developed in interaction



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#### *Quality system*

Concerning the quality system, there were some clear indications that the quality system contributed to an increased quality of knowledge products. 40% of the offered knowledge products were new products. Also, 34% of the knowledge suppliers indicated that the quality of their knowledge products increased, because the products were checked by the board of experts.

Most farmers were satisfied about the product they bought with the vouchers.

However, it also became clear that information about the quality of knowledge products is not so important for farmers in making a choice how to spend their vouchers. This choice is much more based on the familiarity with the knowledge supplier and the practical product-applicability on the farm, than on quality/price comparison.

#### *Study group and studygroup coordinator*

Most newly formed study groups were existing studygroups or part of an existing study group. Also, most of the farmers already knew the studygroup coordinator.

Accordingly, mainly studiegroupcoordinators arranged what kind of knowledge product the studygroup bought with the vouchers before the meetings. It was not a clear and structured process of demand articulation including all farmers of the studygroup. But then during the studygroup meetings there was room for specific questions and demands of the individual farmers.

It also became clear that studygroup coordinators were not really well trained to guide the process of demand articulation. This need some more attention. Now, coordinators were mainly busy with administrative and logistic procedures.

### Findings (5)

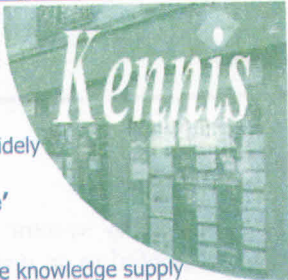
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**Knowledge shop**


- Farmers seem hardly interested in transparency of knowledge products
- Website and leaflet not used widely

**Future role of 'Liaison Service'**

- Independent Service desired
- Role: create transparency of the knowledge supply side



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### *Knowledge shop*

Concerning the last element of the Liaison Service, the knowledge shop, it became clear that most farmers were not really interested in transparency of knowledge products. About 85% of the interviewed farmers had a look at the leaflet, but did not really use it to make a choice how to spend the voucher. Only 21 % of the farmers had ever visited the website, but there are no indications that they used this medium to come to a choice of their knowledge products. Farmers trust much more on existing relationships with their knowledge supplier.

### *Future role*

Related to research question three, most respondents said they would desire an Independent Service for the agricultural sector.

An inventory about a possible future role of such an Independent Service indicated that this Service should contribute to create transparency about knowledge products.

This seems a bit paradoxical seen the fact that respondents did not really use the website and leaflet which were developed to create transparency about the knowledge supply side. It might be an indication that transparency should be organised differently.

### Reflections

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- Little urgency felt by farmers to adapt practices
  - Financial demand dominates
  - No indications for (additional/increased) demand driven knowledge exchange
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Reflections on the main findings of this study lead to three main reflection points:

1. There seems to be very little autonomous urgency from farmers to adapt their farm practices related to mineral management. The main reason for this was that farmers are still waiting for clear policy about the required mineral targets. And farmers are tired of mineral management, they show an 'allergic' reaction towards the subject. In this context, it has been very hard for the Liaison Service to pro-actively stimulate farmers to make changes related to mineral management on their farms.

2. Financial demand dominates substantive demand. It is mainly the financial incentive, so the voucher, that makes farmers buy knowledge products. And not an autonomous clearly articulated knowledge demand.

3. It is doubtful whether demand driven knowledge exchange is really established through the Liaison Service initiative. Conversely, it is mainly the supply side of knowledge exchange which became more activated.

### Conclusion

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- Experiment is worthwhile to continue and improve because:
  - Vouchers contribute to activation
  - Independent Service is desired by most parties



Despite the fact that the Liaison Service did not meet all it was aiming for, and that it seems very difficult to establish truly demand driven knowledge exchange, the conclusion of the research is that this experiment is worthwhile to continue and improve. We conclude this because the research learnt us that:

- vouchers contribute to the activation of the network around farmers. And indirectly, many farmers got activated to do something about mineral-management.

- the respondents desire a kind of Independent Service in the agricultural sector dealing with knowledge exchange, with a possible role in creating transparency about knowledge supply side.

There are two other reasons which legitimate this conclusion, namely:

- that more time is needed to learn about an initiative like the Liaison Service and come to a clear and effective structure for knowledge exchange.

- that the government is (partly) responsible to search for mechanisms to organise knowledge exchange around publicly desired themes, such as mineral-management. So, they might as well continue to support this initiative in order to improve knowledge exchange with the large group of farmers.

## Recommendation

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Identification of four iterative steps which could guide the process to establish more demand driven knowledge exchange:

1. Activation
2. Awareness raising
3. Need articulation
4. Demand driven knowledge exchange



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Finally, some recommendations were formulated for improvement and optimisation if an initiative like the Liaison Service will be continued. The most important one we like to mention here, is that we recommend that more attention should be paid to *the concept of demand driven knowledge exchange*. Realising that practice is more dynamic and complex, we identified four iterative steps which could guide the process to establish more demand driven knowledge exchange:

Step 1: Activation: farmers should be activated to try out new information channels, like participating in a studygroup, invite an advisor. The voucher can be a financial mean to do so.

Step 2 Awareness raising. When a farmer tries out a new information channel, he can become aware of a problem on his farm.

Step 3 Demand articulation when in the second step a problem is identified by the farmer, specific demands about this can be articulated.

Step 4 Demand drive knowledge exchange: if the demands are clear for the farmers and put forward to the knowledge supplier, there is really a situation of demand driven knowledge exchange. Assuming that knowledge suppliers are able and willing to accommodate these demands.

If these four steps are kept in mind in the development and organisation of an initiative like the Liaison Service, knowledge exchange with the large group of farmers might be really based on what farmers demand. In that way knowledge exchange can contribute more effectively to the adaptation of publicly desired farm practices.

#### KAKO SE PROBLEMI OKOLIŠA UPUĆUJU FARMERIMA - MODEL PIRAMIDE, ISTRAŽIVANJA, IZMJENE ZNANJA, PRAKSA I STAVOVI

##### Sažetak

Savjetodavna služba je privatizirana 1990-ih godina. Ministarstvo poljoprivrede nastavilo je pomagati savjetodavne aktivnosti u područjima kao što su upravljanje okolišem i prirodom. Model piramide pokazuje razvoj iskustva i prijenos okolišnih aktivnosti u mljekarstvu. Od vrha do dna nalazimo istraživačke farme, pronalazačke farme, demo-farme i veliku skupinu "prosječnih" farma. Istraživačka farma Marke osnovana je 1990. i tamo je ispitivano iskustvo upravljanja radi smanjenja gubitka minerala. Kasnije je osnovano 17 pronalazačkih farma i 175 demo-farma u svrhu daljih ispitivanja te stjecanja iskustva na samoj farmi s raznim oblicima upravljanja. Osim izvještaja, prenošenja iskustva odvijalo se na danima polja, sastancima farmera i radnih skupina. Ključne riječi bili su jasni ciljevi, izmjena iskustva od farmera farmeru, objektivnost i otvoren pristup. Međutim, proučavanja su upućivala da ove aktivnosti nisu dovoljne da dopru do "prosječnog" farmera. Osnovana je Vezna služba upravljanja mineralima 2002. godine kako bi se stimuliralo izmjenu znanja i eksperimentiralo proširenjem potaknutim potražnjom. 80.000 farmera moglo je tražiti besplatan bon od E 250 za kupnju proizvoda znanja izloženih u "trgovini znanja" na web stranici. Farmeri su isto tako mogli pristupiti studijskoj skupini kako bi zajedno izložili svoje potrebe i kupili "proizvod znanja". Rad tih skupina koordinirali su osposobljeni farmeri. Vezna služba također razvija sustav kakvoće služeći se radovima o zadovoljstvu klijenata kako bi doprinijela tržištu transparentnog znanja.

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