

Stakeholder management in Dutch arable farming using KodA miles

J. Wolfert¹, P.G.A. Pree² and H. van Gurp²

¹LEI Wageningen UR, P.O. Box 29703, 2502 LS Den Haag, the Netherlands, sjaak.wolfert@wur.nl

²ZLTO Projecten, P.O. Box 91, 5000 MA Tilburg, the Netherlands, peter.pree@zltto.nl,
henny.van.gurp@zltto.nl

Abstract

The Dutch innovation program *KodA* aims for sustainable arable farming practices by putting knowledge into practice. ICT is seen as a key enabler to achieve this. The program is setup as a private-public partnership, with a strong emphasis on the private business partners to be in the lead, resulting in a renewed cooperation between research and practice. In this paper, it is argued that this calls for a deviating approach for project management in which stakeholder management plays an important role. A new approach was gradually developed by setting up and running the program. The objective of this paper is to present and discuss this new approach. It is described that an important basis was already laid during the pre-phase of the project by creating synergy through a shared vision and goals. To avoid the risk of illegal public aid to private companies and also keep the administrative burdens low, a special program structure was designed. The core of this structure is that private and public project activities are kept separated with respect to financial resources. This also appeared to be a very powerful steering mechanism for spending public money. A facilitating key instrument was developed, called the *KodA Miles*, copied from the well-known *Air Miles*. Private partners 'save' KodA miles by investing in own activities related to the program's objective and they can 'use' miles by requesting projects for an equal amount of public money that are related to their own activities. Another important part of the approach is an organizational structure that enhances program cohesion, accompanied by appropriate steering mechanisms. It is concluded that, despite of some critical remarks that can be made, this new approach for project management is a very suitable one for private-public innovation programs in which stakeholder management plays an important role.

Keywords: private-public partnership, living labs, knowledge management, standardization

Introduction

Around 2005, a private-public partnership called 'KodA' was established between several actors from the arable farming sector and the Ministry of Agriculture in the Netherlands. KodA is a Dutch acronym of 'Kennis op de Akker' that can be translated into English as 'from knowledge to practice for Dutch arable farming'. The KodA project was preceded by a programming study that defined the context and themes for the project. The results of this study were presented at the EFITA conference in 2005 in Portugal (Wolfert *et al.*, 2005). The objective of the KodA program was then defined as follows:

'To give an innovation impetus to the Dutch arable farming sector that accelerates the transition to a sustainable, process-oriented farm management and strengthens the Netherlands' position in the world market. The program must lead to a renewed knowledge infrastructure with demand-driven knowledge construction as a major spearhead. Improvement of farmer's

entrepreneurship and craftsmanship, supported by management tools that connect up-to-date knowledge and farm-specific data, plays a central role.’

Mainly because of the latter part of this objective, ICT is seen as a key enabler to achieve the program’s objective. By means of ICT, the farmer is able to use and deploy knowledge, information and data in an efficient way. Development of integrated management support systems in which actual, state-of-the-art knowledge and farm-specific data are combined, is considered as a key prerequisite for further development. However, in the programming study it was already identified that several factors hamper integration of these systems. Standardization is one of the major problem areas. Hence, ‘Integration and Standardization’ is defined as a prominent theme in KodA. For this theme, a vision was constructed that was presented at the EFITA conference in 2007 in Portugal (Wolfert *et al.*, 2007) and further elaborated for the eChallenges 2007 conference (Verdouw *et al.*, 2007):

‘Developments should follow a service-oriented architecture (SOA) approach, and should support companies to focus on their business processes. At the same time attention must be paid to the organizational aspects. A step-by-step approach in which business partners themselves are responsible, organizational embedding and involvement of all relevant stakeholders are important success factors’

Within the KodA program, this vision was elaborated by several pilot projects on precision fertilizing (Verloop *et al.*, 2009), pesticide advice (Wolfert *et al.*, 2009a) and mineral planning. From these experiences, a new method for organizing information integration in agri-food is proposed recently (Wolfert *et al.*, 2009b). A framework forms the core of this method. The technical part of this framework is mainly based on the principles of Business Process Management (Smith *et al.*, 2002) and Service-Oriented Architecture (Erl, 2005). The organizational part of the framework is defined as a step-by-step design approach, embedded in a Living Lab approach (Mirijamdotter *et al.*, 2006; Verloop *et al.*, 2009).

In another presentation about KodA at the EFITA 2007 conference it was explained that adoption of ICT for innovative purposes fails in many cases, because one tends to search for automated solutions too early in the process of change (Geerligs and Wolfert, 2007). In KodA we wanted to avoid this pitfall. Therefore, Geerligs and Wolfert (2007) proposed a multi-layer network development. The core of this development is that:

‘a network of stakeholders starts to work together on an unstructured problem, *i.e.* means-ends relation are unclear in the beginning. They have to go through several phases (or layers) of development before an innovation meets its maturity level, starting with the phase of a ‘mission impossible’, followed by a conception of will. Then, a new routine is established followed by an upgrade of the structural environment and finally upscaling and efficiency improvement.’

It is important that the end users, the arable farming partners in KodA, are kept in the lead, especially in the first phases. Knowledge- and ICT-workers are involved, but only get the lead at the final phase. It can be recognized that this links up with the movement that is called Living Labs that has emerged in Europe since approximately 2005 (Mirijamdotter *et al.*, 2006).

It was also recognized that KodA requires a project management approach, which is different from the common ones (e.g. Prince II), especially for the steering of the project. A major difference is that project management is closely tied to stakeholder management in different layers as described in the previous paragraph. A new approach was gradually developed last years in the KodA project and a key instrument was called ‘KodA miles’. The objective of this paper is to present this new approach and instrument. For a good understanding, we will first briefly rehearse what the KodA

project was about. Then we will describe the project management approach that was developed. Finally, we will discuss and conclude this approach.

General description of the KodA project

The research and technology development program KodA aims for sustainable farm practices in the field of arable farming by putting knowledge into practice in an applicable way. In KodA, several hundreds of arable farmers, their suppliers and processors (about 12 large companies), work together to improve quality and efficiency of arable crop production. The program has a total budget of 8 M€, in a private-public partnership with the Ministry of Agriculture. As explained in more detail in the next section, this means that 4 M€ is invested by the private partners; the other 4 M€ is invested by the government by financing projects (contributing to well defined public goals) that are requested by the private partners as a result of their activities in KodA.

The activities of the private partners can be divided into three major themes:

- Quality improvement, mainly applied to ware potatoes and grain. Some example activities are: improvement of potato skin, relationship between grain quality and growing, extension of electronic registration system, improvement by new fertilizers and crop varieties.
- Efficiency improvement, mainly applied to sugar beets and starch potatoes. Some example activities are: electronic registration, study groups on 'best practices', learning styles for innovation and knowledge transfer and speeding up sugar yield.
- Sustainable farm management, focusing on optimal information supply to make better decisions. Precision agriculture is a dominant theme. Some example activities are: site-specific nematode management, -N-fertilizing, -sowing sugar beets, soil and crop monitoring and yield mapping.

The activities that were financed by public money were classified into:

- Knowledge construction, understanding the mechanisms of effective use of results of research and kinds of advice.
- Integration and Standardization of ICT, developing an integrative architecture and infrastructure based on data standards for ICT tools in arable farming.
- Steering of public-private cooperation by new alliances of growers, suppliers, processors, buyers and government.

The first characters of the key words in theme 4, 5 en 6 can be abbreviated as the KISS of KodA. The activities in the KISS-themes are generally conducted by research institutes, consultancy companies and software developers.

To monitor and evaluate the program, a special tool was developed (Geerligs and Wolfert, 2007) based on defining innovative tasks and related critical situations. Innovative tasks were defined at the level of perspectives, conventions and routines. The critical situations were identified at the level of competences, designs and insights. Solving the critical situations results logically in an agenda for research and development of the program.

Full activities started in 2006 and the program officially ends this year in 2009.

A new approach for stakeholder and project management

The challenges or requirements for setting up project management for KodA could be described as:

- keep the business in the lead and challenge them to innovate and cooperate;
- projects and activities should fit within the strategic objective that was defined;

- keep administrative burdens as low as possible;
- use a legal and fair tendering of projects.

In this section, we will describe how the project management in KodA was gradually shaped. First, we will describe the main steps that were taken in ‘the making of KodA’. Then we will focus on the key instrument that was developed to facilitate the project: ‘KodA miles’. Finally, we will describe the organizational fine-tuning in steering that was needed to make it work.

The making of KodA: synergy through shared vision and goals

The process of setting up KodA started with a shared sense of urgency on the question: ‘why is knowledge of experts not fully used in the field?’ The first key moment was that the Minister of Agriculture challenged the sector to come up with a proposal. An important additional condition he made was that it should result in a renewed cooperation between research and practice. As already mentioned in the introduction, this challenge was taken up by executing a programming study. Usually these kind of studies are carried out by research or consultancy institutes. In the case of KodA, already in this stage, the stakeholders – arable farming business – were in the lead in doing this study. As a result, the ministry of agriculture promised to contribute 4 M€ for 4 years to work out the objective of the study, which can be sharply summarized as ‘bringing knowledge into the field’. However, an important condition for funding was that private partners did a similar investment.

So, the next step was finding tangible commitment (stake) of sponsors (stakeholders) who could report their investments that contributed to the central objective of bringing knowledge into the field. An important choice that was made, was to include arable farmers through their chain partners, which are processors and input suppliers. In the Netherlands, these companies are mainly cooperatives of farmers. The benefit was that these companies can do substantial investments, so that the 4 M€ could be brought together with a relatively small group, which makes steering more easy. A perhaps larger benefit is that with this move, the project instantly became a project of the whole chain, with partners that are in the front line of the market. Finding the right investment activities was an interactive process. The developers of the project knew what fitted in the project; the business partners knew what fitted in their strategy. The best way to identify the right activities was to get insight into the innovations that were connected with the strategic challenges for the next 10 years they were faced with. One of the positive side-effects that would become stronger during the execution of the project was that it was recognized that several individual objectives were overlapping between partners, so they decided to join forces on several subjects.

A problem that occurred was that the government could not simply subsidize activities of private firms because of the risk of possible ‘illegal public aid’. Of course, this is a well-known problem with public-private partnerships and usually a special regulation is made that has to be approved by the EU. However, this would take a lot of time and the private partners had bad experiences with these kind of regulations because of the vast load of administrative burden. A solution was found by defining the program in such a way that the private partners do their own projects from which certain questions arise. These questions are answered in separate projects, that are publicly funded. The KodA partners do not execute these public projects themselves. So, no direct cash flow goes from the government to the private partners, which tackles the problem of possible illegal public aid. The only legal procedures that had to be taken into account for the publicly funded projects are the common EU rules on tendering. The outcome of this solution is schematically represented in Figure 1.

Although a practical problem was the reason to develop this model, it more or less accidentally resulted in a very powerful steering mechanism for spending public money. For the actual execution

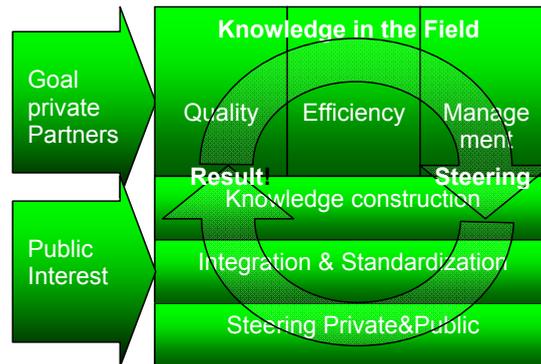


Figure 1. The KodA 'six-pack'. The goals and activities of the private partners are classified into three themes (vertical bars). From these activities, projects are requested that are also classified into three themes (horizontal bars). The two kind of activities - private and public - are closely related with each other, but financially separated.

of the program in projects, more detailed instruments were needed. An important instrument to regulate the financial incentives is the so-called 'KodA miles' instrument, which will be described in the next section.

KodA miles

Working together is time consuming. Partners work together in KodA because they feel that they will get benefits. However, they do not want to be charged with high administrative burdens. In KodA, we developed a straight-on 'KodA miles system', which is to a certain extent comparable with the well-known Air Miles system. It is schematically represented in Figure 2.

Starting point of the system is *not* to mix private and public money. This means, that:

- Private partners do their own activities within the context of the KodA objective. They pay them with their own money, or their employees do the job (= save miles). The money represents an equal amount of KodA miles: $1\text{€}[\text{own activity}] = 1\text{€}[\text{KodA mile}]$
- Requests of the private partners are granted *in kind*: partners get results, not (the nuisance with) money (= use miles).
- Private partners only should provide a few administrative data on saving KodA miles, to get the possibility to do requests.
- The more (miles) a private partner does (saves in miles), the more he can request.
- The more goals a private partner defines and the more he *plans* to do (save), the higher the maximum he can request (use).
- In KodA, the maximum value of the tailor-made requests is 50% of the value of the activities of the private partner.
- The other 50% is put into a cooperative fund. On requests out of this fund, the steering committee has to decide.

A very positive stimulus from this system is that the private partners first have to do investments before they can make a request for the public resources. Then, they can spend their KodA miles only once, so they have to think carefully which requests they make. As a result, the publicly funded project result is closely related with an actual question from practice, so the chance that the result is really used in practice is very high.

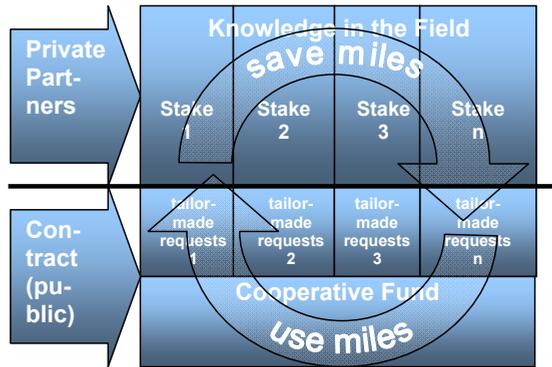


Figure 2. The KodA miles instrument. Private partners save ‘KodA miles’ by doing their own activities and use miles by requesting projects that are publicly funded. Only 50% of the request can be used for tailor-made wishes; the other half is used for a cooperative fund.

The KodA miles system is a key instrument in the new project management approach. Still, decisions have to be made at several moments, requiring a further organizational structure, which is described in the next section.

Finetuning in steering

The organizational structure of the steering mechanism is schematically represented in Figure 3. The steering group takes all the final decisions in the program. The steering group decides on the cooperative requests. The fact that half of the budget is for cooperative requests, forcing partners to discuss on issues that are more strategic.

Each business partner decides who will represent him in the steering group. This member decides on his requests for custom orders. In this way, decisions on requests can be made quickly. This method of decision making seems to promote prejudice; in practice it does not. The member of the steering group always must be able to defend his decisions in the whole steering group. For his good name, he cannot take the risk to agree on bad activities.

The government, the public funder, is also member of the steering group although they officially have no vote in taking decisions on requests. The advantage is however a good contact on relevant issues.

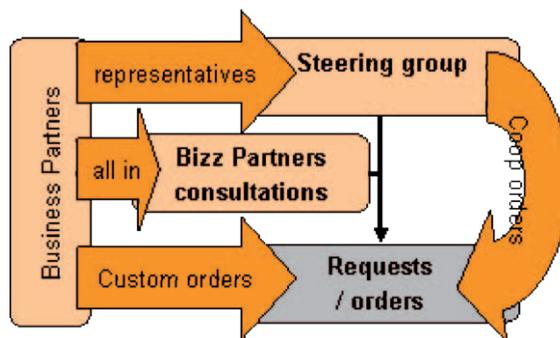


Figure 3. Overview of the organizational steering mechanism in KodA.

Steering goes on after a request. During the execution of the projects, the partner that requested it, has close contact with the advisor or researcher that executes it. The partner wants to get a useful outcome of the project and wants to use it as soon as possible.

The proceedings of the projects are discussed in the plenary consultations with the business partners.

Discussion and conclusions

A project like KodA required a new approach for project management that is closely linked to stakeholder management. The presented approach keeps the private business partners in the lead and they are challenged to search for innovations and to cooperate with each other. The financial instrument 'KodA miles' is proven to be a strong incentive to guide this process into the right direction. The organizational structure took care of a shared responsibility to move towards a strong and innovative arable farming sector. This structure also led to a high degree of involvement in the project activities by the steering committee. At the same time, it took care of quick and smooth decision-making and left much room for changing plans and directions because of progressive insights. Especially the KodA miles system appeared to be a new approach for legal and fair tendering of projects, while the administrative procedures are kept to a minimum. The Ministry of Agriculture has indicated that they want to continue with this instrument for other innovation stimulation programs.

One of the critics on the approach is that private partners will put forward activities to save miles that they had already planned, so it is not really new and probably not very innovative. This is partly true. However, first of all, our experience with other approaches is that business partners are quite reluctant to initiatives that require only very new and usually high-risk investments. In the end, it often appears that the public money is not spend at all because of no or little interest. Furthermore, a benefit of this approach was that existing or planned activities of partners were now done openly together and gradually this cooperation led to more innovative project ideas, especially in the third and fourth year. Finally, most activities of strategic interest were given priority in business, in contrast to many subsidized activities that cease down as soon as the subsidy stops.

It should be noted that the business partners were affiliated with different crops (sugar beets, grain, ware potatoes, starch potatoes). This means that they were mostly not operating at the same markets, so they were no competitors. Maybe the approach will work out differently if this is the case. This brings us to another point of discussion: intellectually property rights (IPR). The rules on IPR were quite simple and straightforward. Results from publicly funded projects were open for everyone. Results from of private business initiatives were confidential if desirable. In practice it appeared that this knowledge is also distributed: partners are proud on what they achieve and are eager to tell it. They are open *because* they can choose to whom they tell it, and under what conditions.

Experience learns that it takes only half an hour to explain how the system of KodA miles works. Than it takes an hour to convince business partners that it is really that simple. It took 4 years to convince ourselves that it really works. Our conclusion is now: it works! Partners are inspired to do their best and tell it. We are also eager now to tell you this secret.

References

- Erl, T., 2005. Service-Oriented Architecture (SOA): Concepts, Technology, and Design. Prentice Hall.
- Geerligs, J.W.G., Wolfert, J., 2007. Multi layer networked development: how is stakeholder involvement successfully applied in ICT development in agriculture?, Proceedings of the EFITA/WCCA conference, 2-5 July 2007, Glasgow.

- Mirjamdotter, A., Ståhlbröst, A., Sällström, A., Niitamo, V.-P., Kulkki, S., 2006. European Network of Living Labs for CWE - user-centric co-creation and innovation. In: Cunningham, P., Cunningham, M. (Eds.), *Exploiting the Knowledge Economy: Issues, Applications, Case Studies*. IOS Press, Amsterdam.
- Smith, H., Neal, D., Ferrara, L., Hayden, F., 2002. *The Emergence of Business Process Management, CSC*.
- Verdouw, C.N., Wolfert, J., Beulens, A.J.M., 2007. Information Integration in Multi-dimensional Agri-Food Supply Chain Networks: a Service-Oriented Approach. In: Cunningham, P., Cunningham, M. (Eds.), *Expanding the Knowledge Economy: Issues, Applications, Case Studies 4*. IOS Press, Amsterdam, pp. 1024-1031.
- Verloop, C.M., Wolfert, J., Beulens, A.J.M., 2009. Living Lab 'Information Management in Agri-Food Supply Chain Networks'. In: Bregt, A.K., Wien, J.J.F., Wolfert, J. (Eds.), *Proceedings of the EFITA 2009 conference, 6-8 July, Wageningen, The Netherlands*.
- Wolfert, J., Matocha, D., Verloop, C.M., Beulens, A.J.M., 2009a. Business Process Modeling of the Pesticide Life Cycle - a service-oriented approach. In: Bregt, A.K., Wien, J.J.F., Wolfert, J. (Eds.), *Proceedings of the EFITA 2009 conference, 6-8 July, Wageningen, The Netherlands*.
- Wolfert, J., Schoorlemmer, H.B., Pree, P.G.A., Zunneberg, W., Van Hoven, J.P.C., 2005. KodA: from knowledge to practice for Dutch arable farming. In: Boaventura, J., Morais, R. (Eds.), *Proceedings of the joint EFITA/WCCA 2005 conference, 25-28 July, Vila Real, Portugal*, pp. 883-888.
- Wolfert, J., Verdouw, C.N., Beulens, A.J.M., 2007. Integration and standardization in arable farming practice: a service-oriented approach. In: Parker, C., Skerratt, S., Park, C., Shields, J. (Eds.), *EFITA Glasgow 2007: Proceedings of the 6th Biennial Conference of the European Federation of IT in Agriculture, Food and the Environment, 2-5 July 2007*. Glasgow Caledonian University, Glasgow.
- Wolfert, J., Verdouw, C.N., Verloop, C.M., Beulens, A.J.M., 2009b. Organizing information integration in agri-food - a method based on a service-oriented architecture and living lab approach. submitted to *Computers and Electronics in Agriculture*.