Chapter 6
Sustainable crop production: the Gideon project

In the previous chapter, the dynamics in the 1990s in the scientific research on food and agriculture as well as in the institutional organisation of agricultural policy were depicted as expressions of a 'chain reversion'. Overproduction and market saturation, together with changing views on the role of government in society led to a reversal in the thought on food production, and in the organisation and design of agricultural research. Market demands and consumers' preferences came to form the starting point for setting up research instead of the production process. These dynamics form the general background against which the interpretive TA project that is discussed in this chapter took place.

A growing awareness of the detrimental effects of the current agricultural practice added to the changing assumptions about the objectives of research. Over time, this also led to an increasing policy effort to manage and control the environmental impact of both livestock production and arable farming. The latter efforts included policy measures to control chemical crop-protection agents and to reduce their application.

To that end, in 1990, the Dutch government formulated a Multi-Year Plan for Crop Protection (henceforward the Dutch abbreviation will be used: MJP-G). The Plan's objectives were to reduce the quantities of pesticides that are being used per acre, to decrease emissions to the environment and to generally diminish the agricultural practice's dependence on chemical pesticides. The Plan covered a ten year period. A midterm evaluation was planned, on the occasion of which the MJP-G was to be extensively discussed in Parliament. The Dutch parliamentary TA organisation, the Rathenau Institute, considered this a suitable occasion to provide Members of Parliament with background information on crop-protection from the perspective of a sustainable development. With that goal in mind, the Institute launched a project on "Crop Protection Suitable for Sustainable Use and a Healthy Economic Development in the Netherlands" which was called the 'Gideon' project after its Dutch acronym. The Gideon project intended to stimulate a discussion on the crop-protection policy beyond a mere goal achievement evaluation of the MJP-G. It aspired to provide its audience with ideas to formulate a long-term perspective on crop-protection beyond the MJP-G time-span.

Below, the changing views on agricultural policy and research in general and on crop-protection policy in particular will be described as the background against which the Gideon project took shape. The drafting of the MJP-G (moment t in figure 3.1) was

1 The empirical material was presented previously in the context of the EUROpTA project as A. Loeber, 1999, Crop protection and environmental concern: the Gideon project. Rathenau Institute, working document.
a milestone in the slow and hesitant process of changing views on agricultural practice in the Netherlands. It gave momentum to an alternative view on agriculture and agricultural policy that was gradually winning ground. It was this development that induced the Rathenau Institute to initiate the TA on the issue of crop-protection.

The project's description will start with an elaboration of its preliminary study (moment t) and institutional setting. Subsequently, the analytic process will be described together with its outcome and results (moment t). The project's impact on the policy field will be traced by focusing on the period between the MJP-G's evaluation in Parliament and the onset of the preliminary activities in drafting its successor, which at that time was referred to as "Plan Faber" (moment t). In the final section, the question will be raised why in spite of the methodically carefully elaborated analytic approach that was adopted in the TA and the careful operations of the Rathenau Institute to put the project's findings to the attention of Parliament, the project's effect on the parliamentarian discussion of the crop-protection policy was limited. In addition to the characteristics of crop-protection as a policy issue and the particularities of its political context, which affected the course of events, an explanation is found in the tension between the methodological considerations on the basis of which the Gideon project was designed, and the strategic considerations of the commissioning Institute. This tension came practically to the fore in the complex interplay between the analytic process and the project's advisory board comments on the course of events and the project's findings.

The policy context: a tight knit network is loosening up

The agricultural sector in the Netherlands is relatively large compared to the available amount of arable land. It comprises of arable farming, livestock production, horticulture and forestry. Together with the ancillary industries that supply seeds, inorganic fertiliser, animal feed, technical equipment et cetera, the sector is "one of the world's leading industries" as the Ministry of Agriculture's website posits, and a strong force in the Dutch economy. In general, employment in the agricultural sector is relatively large, although steadily decreasing in recent years.7

The co-operative attitude among the major actors in the field of agriculture contributed largely to the sector's strength. In the post-World War II period, the governmental policymakers, the agricultural business community and its representative organisations, interest groups, agricultural research institutes and (non-)governmental advisory councils grew into a tight knit network. Close co-operation and consultation between a

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7 The agricultural sector comprised of a total of 548,000 man-years in 1995 compared to 591,000 man-years in 1980. In 1995, the output of the agricultural sector constituted 10 percent of the total labour output in the country. Sources: CBS and LTO-DLO estimates (cf. http://www.mininv.nl).
variety of actors in a specific field may be considered a characteristic trait of many sectors in Dutch society. Specific of the agricultural network was the so-called “iron triangle” that formed the heart (and fist) of the sector.

The “iron triangle” consisted first and foremost of the Ministry of Agriculture and the Standing Committee on Agriculture (Vaste Kamercommissie voor de Landbouw). The latter is the assembly of Members of Parliament who hold specific knowledge on agricultural policy issues. In general, of the Committee’s approximately 25 members, many have been farmers themselves or are personally related to farmers. Another cornerstone in the ‘iron triangle’ was the agricultural business community’s main representative and branch-organisation, the Agricultural Board (Landbouwschap). It was the Ministry’s and Committee’s regular and long-trusted partner in policymaking. Since its installation in 1954, this corporatist umbrella organisation formed a major power block in the agricultural community and, among other activities, promoted the interest of the agricultural sector in many respects. The Ministry accorded the Agricultural Board great influence on the formation of policy and provided it with strategic information. In exchange, the agricultural organisation offered its co-operation in implementing policy regulations. The third partner was the research conglomerate on agriculture. This consisted of various ministerial division of agricultural research (the so-called DLO institutes (Dienst Landbouwkundig Onderzoek, see chapter 5) of which there were twelve at the time of the Gideon project) together with the Agricultural University of Wageningen.

This neo-corporatist system in agriculture (Frouw 1994) used to favour a technocratic problem solving approach to policymaking on agricultural issue. Recent years show some profound changes in the constellation of the iron triangle, both in the philosophy endorsed by its partners and in the network’s institutional arrangements.

Changes in the structure of the ‘iron triangle’

A major change in the agricultural network’s institutional arrangement was the dismantling of the Agricultural Board. Financial considerations formed the main incentive to gradually hive off its managerial tasks to various Commodity Boards for agricultural produce (productschappen). This development was a cue to reconsider its representational function as well. It was decided to concentrate the representation of the primary producers’ interests in one representative body. In 1995, the farmers’ organisation LTO-Nederland was called into being as a successor to three major farmer representa-

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1 Compare the “culture of compromise” in water management that was referred to earlier (chapter 4). Most Dutch policy fields are characterised by a practice of preparing policy proposals in consultation with a variety of stakeholders and (temporary or semi-permanent) issue-related commissions, councils and advisory boards at the national, regional and local level.
tive organisations. The newly installed body took over the Agricultural Board’s representation tasks. Consequently, LTO-Nederland became a major sparring partner in matters of agricultural policymaking. Furthermore, it gained a profound influence on the agricultural practice in the Netherlands by means of its infrastructure of regional organisations and local study-groups in which farmers actively participate. Thus, it came to play a pivotal role in agricultural practice and policymaking.

For reasons discussed in chapter 5, the agricultural research institutes in the last decade of the 20th century underwent some drastic changes as well. The governmental DLO research institutes were gradually privatised, and were affiliated with the organisational structure of the Wageningen University (which organisations now operate together under the heading of “Wageningen - University and Research”). In addition, the agricultural knowledge extension infrastructure was changed profoundly. The governmental institute, the Dienst Landbouwvoorlichting (DLV), which in the post-war period was the main channel for disseminating knowledge from the (ministerial) research institutes to farmers, was privatised in the first half of the 1990s. A new structure for knowledge dissemination was developed in its place. The “Information and Knowledge Centre - Agriculture” (IKC-L) was installed to act as “the eyes and ears of the Ministry of Agriculture” (Van Esch, personal communication, May 3, 1999). It was to provide extension institutes, among which the privatised DLV, with information on agricultural policy and at the same time to provide the Ministry with information on developments in the sector. Thus, the once top-down approach to agricultural knowledge production and utilisation was, it was hoped, replaced by a more interactive exchange of information.

With the loosening up of the iron triangle in the late 1980s and 1990s, other Ministries, non-agricultural interest groups and Members of Parliament that did not belong to the Standing Committee on Agriculture gradually gained influence in agricultural policy formation. At the same time, food companies and the agricultural business community came to increasingly influence the agenda of the research institutes in the field. Both developments contributed to a gradually changing perception of the agricultural sector’s interests. Furthermore, the sector became more sensitive to criticism with respect to the environmental aspects of the agricultural practice.

1 Until their merger in 1995, these were the Katholieke Boeren- en Tuinders Bond, the Koninklijke Nederlandse Landbouwcommissie, and the Nederlandse Christelijke Boeren- en Tuindersbond.

2 See chapter 5. The change from a governmental lump-sum financial support system to privately financed projects commenced in this period. By the end of the 1990s, fifty percent of the total number of PhD research at the Agricultural University was financed by third parties (NRC, February 20, 1999).
Changing views on the sector's responsibilities and interests

As was discussed in chapter 4, the first reluctant steps towards acknowledging the agricultural sector's responsibility for the quality of the environment were taken in the early 1980s. At that time, the Ministry of the Environment functioned as a kind of watch dog vis-à-vis the Ministry of Agriculture. Some twenty years later, at the time of the aforementioned structural changes, the latter often found itself complying largely with the viewpoints of the former. The Ministry of Agriculture in the 1990s was known to take a stance towards environmental issues in agricultural policy that was considered more progressive than the views of many of the sector's other spokesmen, including those in the parliamentary Standing Committee on Agriculture. The Committee's members were generally not the first to give witness of an open eye for the detrimental effects of agricultural practice on the environment.

The focus on sustainable development that came to dominate the approach to agriculture in governmental research councils such as the RIVM and the NRLO in the mid 1990s, in many ways was often a step ahead of the majority of farmers in the Netherlands. Most farmers at that time worked in a manner that reflected the attitude towards agriculture, modernisation and economic growth that characterised the larger part of the post World War II period. Only a small number of farmers cultivated their land according to ecological ("biological") production method standards, which implied for instance abstinence from synthetic pesticides and fertilisers. In addition to the traditionally and ecologically producing farms, there were also farmers who did use pesticides and artificial fertilisers, but as little as possible. Their so-called "integrated cultivation farms" also constituted a very small segment of the total agricultural production area in the Netherlands, yet were increasing in number.

The interior and international market demand for Dutch ecologically produced fruits and vegetables in the 1990s was increasing (LNV 1996). Yet, the rather adverse geo-physiological conditions for agriculture in the country, as well as the increasing international competition, did not provide stimuli for farmers and growers to change their ways. The humid and therefore disease-prone soil encourages the use of artificial fertilisers and chemical pesticides. Furthermore, the limited amount of land that is available for agricultural production is relatively expensive. In addition to the high labour costs in the Netherlands, of old, these factors stimulated a highly intensive mode of agricultural production, both of horticultural crops and of livestock. This approach to agriculture was not easily tossed aside. It had been propagated systematically by the

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6 The Netherlands' National Institute for Public Health and Environmental Protection and the Netherlands' Council for Agricultural Research respectively. (See note 52, chapter 5, this book).
7 In 1995, 521 farms, covering 0.6% of the then available total of the Dutch agricultural area, was cultivated according to ecological production standards. The total area used for this kind of production in the mid 1990s was slowly increasing with an average of a little less than ten percent yearly (LNV 1996:3).
well-functioning system of agricultural research, extension and farmers education that was built up from the 1950s onward.

Among the technical means that the research and extension institutes propagated at that time were fertilisers and chemical pest control agents. They came to play a central role in Dutch agricultural production.

**Pest control, crop-protection and the environment: a new policy issue**

The use of pesticides is believed to date back to the Middle Ages. Over the ages, various substances were used to fight of insects and other threats to crop production. Yet, the systematic use of synthetic substances to protect crops against insects and fungi dates from the beginning of the twentieth century. Both World War I and II formed an impetus to the development of crop-protection agents. The war implied a reorientation in research and development activities in various fields including the chemical industry. Chemicals and technologies that were developed for warfare were later applied in agricultural practices. At the same time, the development and sales of products developed for agriculture, such as DDT (a 1939 Swiss invention) got a boost for its applicability for war related purposes, such as the control of lice on soldiers and refugees (Perkins 1982:3-10). After World War II, a practice of ‘modern’ crop cultivation, *i.e.* of ‘high external input agriculture’ (HEIA) gradually gained a foothold throughout the North. The Netherlands came to be the world’s largest user of pesticides in relation to the amount of arable land that is available (Bieleman 1997).

The development of chemical pest control was embedded within the continual process of agricultural change that took place from the nineteen century onward (Perkins 1982). This transformation process, of which the gradual replacement of labour by other inputs is the main characteristic, included changes in the infrastructure that allowed for commercial farming, the adoption of new plant varieties and new animal stock and the use of chemicals such as pesticides.

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8 The word ‘pesticides’ is used here to indicate a broad range of chemicals such as soil disinfectants, fungicides, herbicides, haulm killers (for killing the green parts of potato plants for instance) as well as products for eliminating insects.

9 The incidental discovery of the insect-killing capacities of the dye ‘Paris green’ in 1868 is believed to form the starting point of an era in which toxic substances for crop-protection were developed systematically (Perkins 1982:3). In the Netherlands, the development of crop-protection products by the chemical industry began at the onset of the 20th century with the introduction in 1913 of mercury-based agents and in the 1920s with copper-based agents (Reijnders 1984:59).

10 The label of HEIA is used to indicate a complex of interrelated technological and organisational aspects of agricultural management which focuses on specialised production based on an optimal control of production conditions (water regimes, microclimates *et cetera*), the use of genetically homogeneous seeds and the application of agrochemicals such as fertilisers and pesticides (cf. Bunders *et al*.1996:2).
Unlike agriculture as such, of old, pesticides did not constitute a policy issue in the Netherlands. Until the 1980s, regulations and control measures with regard to crop-protection agents merely focused on public health issues and user safety. For these reasons, the admission and licensing of new pesticides in the Netherlands was strictly controlled. In the early 1980s, pesticides started to appear on the political agenda for reasons pertaining to the environment. Then, acts and regulations concerning chemical crop-protection were gradually modified and complemented to include criteria based on environmental notions. These developments often met with considerable protest from the field of agriculture. Both fertilisers and protection agents had come to be looked upon as acquired assets in a highly appreciated mode of production and were largely considered indispensable to a thriving agricultural business community.

A growing awareness of environmental aspects of pesticides

The criticism on chemical pest control practices, yet, had an equally deep-rooted history. An (international) discussion on the negative side-effects and possible dangers of pesticide use started along with the substances' wide-spread adoption. At a symposium on biological control in 1950 in the USA, some scientists insisted on developing an ecological approach to crop-protection in order to avoid the pitfalls of toxic chemicals (Perkins 1982:40). The first criticism that was to arouse a wide public response internationally was that of Rachel Carson (1962). In her book, she criticised the use of pesticides for being indiscriminate in their effect on insects, wildlife and people. Furthermore, she pointed at the problem of insects' resistance to pesticides, a phenomenon that was slowly being recognised. Over the years, a debate developed among a variety of scientists on various aspects of crop-protection substances and technology.

7 Perkins' (1982) political analysis of pesticide use in the United States discusses the reasons why pesticides traditionally did not incite governmental action. Arguably, his observations also hold true (to some extent) for the Dutch situation as well: "Insecticides were compatible with the political divisions of responsibilities in agricultural production. ... Government intervened only by establishing land-distribution policies, agricultural research institutes, farm subsidy programs, and rules under which chemicals could be manufactured, sold, and used. ... [It was not] assumed that insect control was fundamentally a public responsibility. Exceptions were made for disastrous outbreaks (...), but in general the assumption was that each individual would handle his own insect problem. Insecticides suited these assumptions in political philosophy perfectly, because everyone with a problem could 'solve' it with a chemical precisely suited to their own specific circumstances" (1982:271).

8 The main stipulation affecting this field is the Crop Protection Act. The Act, which dates from 1962, regulates the admission and registration of substances for crop-protection and pest control. The Crop Protection Act was reviewed on the occasion of the implementation of EU-directive 91/414/EU, which stipulates that the active ingredients in agents are to be assessed on the basis of the same set of criteria in all member states. The opportunity was seized to review the Act with regard to its implementation procedures. These were considered time-consuming and lacking in clarity. Until the review, the responsibility for admitting substances was divided among four Ministries, represented in a specific governmental committee. This committee was replaced at that time by an independent board that acts at its own discretion. This Collegium for the Admission of Pesticides (CTB) has a task in reviewing new products but also in reassessing previously admitted agents on the basis of criteria concerning environmental aspects, which have been formulated more recently. The 1991 EU-directive that is based on the concept of 'Uniform Principles,' which holds that if a substance is admitted in one country, it is automatically allowed in the other countries, has not yet been applied consequently, and is subject to quite some criticism.
The world-wide debate on the dangers of DDT and other agents based on chlorinated hydrocarbons had a general response in Dutch society in the 1960s (cf. Briejer 1967). The discussion on the societal aspects of pesticides started within academic circles, notably from within the Agricultural University of Wageningen. In the 1970s, the farmer representative organisations took the lead in criticising the health aspects of pesticide use. They stimulated regulations concerning labour conditions and safety aspects for applying chemical agents. At that time, policy activities concerning the environmental aspects of crop-protection agents were limited to ad hoc measures with respect to specific substances. Environmental organisations (Milieudefensie, Stichting Natuur & Milieu) and the Ministry of the Environment put the environmental issue up on the political agenda, aided somewhat later by the water authorities that were charged with controlling the quality of surface waters (see chapter 4). The latter are now-a-days among the most persistent critics of pesticide use, since residues in surface and ground waters pose serious threats to the attainment of drinking water. As mentioned, by the 1980s, these environmental concerns found response from within the Ministry of Agriculture.

The first governmental action with respect to the environmental aspects of pest control was undertaken in 1983. A White Paper from the Ministry of Agriculture (L&V 1983) provided an overview of the possibilities for developing crop-protection methods and procedures that were sensible from both an economic and an ecological point of view. Among the direct incentives for governmental action was the amassment of methyl bromide in drinking water, which was commonly used as a soil disinfectant, as well as the impact of various pesticides on bird populations. The paper’s main objective was to reduce the use (in terms of absolute quantities) of chemical crop-protection substances. Because of the origins of the discussion on pest control (the phyto-pathological division of the Ministry of Agriculture in the Wageningen Agricultural University), the proposed crop-protection policy in the first instance amounted to a policy on plant disease control and focused on the technical possibilities to exercise such a control.

The paper did not have the impact it was intended to have. There was little enthusiasm in Parliament to discuss the issue. The members in the Standing Committee on Agriculture did not consider a policy on pesticides in the interests of the agricultural sector. The paper was, under pressure from farmer representative organisations, “effectively neutralised” (Ottenheim, personal communication, December 1, 1996). Yet, it did contribute to the growing awareness in the agricultural sector of the environmental aspects of cultivation. In the wake of the paper’s publication, the policy issue was institutionalised at the Ministry in the form of a ‘Directorate on Crop Protection’ (which was later brought under the Directorate of Agriculture).

The next White Paper (LNV 1987) had a more distinct impact. It discussed the motivations to come to a long range plan for inducing a reduction in the dependency on
the chemicals used in crop cultivation. This White Paper and its sequel of two years later (LNV 1989) laid the foundations for the major policy paper on the issue of crop-protection, the Multi-Year Plan for Crop Protection (MJP-G) (LNV 1990). The first National Environmental Policy Plan (VROM 1989a) as well as an issue-focused paper of the Environmental Department on crop-protection (VROM 1989b) that were published at that time, not only provided a formal basis for formulating crop-protection as an environmental issue, but also contributed to a favourable political climate in which the MJP-G was launched.

**Framing the policy problem: 'dependency on chemicals'**

The idea underlying the MJP-G was to develop a more integral policy approach to crop-protection than the ad-hoc safety-related measures of the 1970s and the technical focus on plant disease control in the 1980s. The inclination towards technical solutions remained visible however.15

The Ministry’s point of departure in conceptualising the crop-protection issue in the MJP-G was that sustainable agriculture requires a balance between economic and ecological objectives. Therefore any policy should be based on the notion that the agricultural sector (agriculture, horticulture and the agribusiness) must be able to maintain and enlarge its international competitive position. Governmental involvement with crop-protection was required, the paper argued, as the continuous application of chemicals results in a vicious circle of dependency on these agents. This dependency was observed to lead to agricultural and environmental problems. The paper continued to list the detrimental effects of the accumulation of agents in the environment (resistance in insects and micro-organisms; impoverishment of the original flora and fauna; and pollution of ground- and surface waters). Furthermore, the paper observed that the image of the agricultural sector in the public’s eye was suffering as a result of these negative effects, which in turn might have a negative effect on the sector.

The crop-protection policy as outlined in the MJP-G (see box 6.1) was formulated after long and difficult consultations between various departments of the involved four Ministries.14 The plan posited three policy objectives, concerning i) the reduction of the volume of the agents used, ii) the reduction of emissions of chemical agents into the environment, and iii) the reduction of the dependency on chemical crop-protection

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15 For instance, in the MJP-G and its yearly evaluation reports, the reduction percentages for substance use were 'constructed' by scrutinising, first, the technical potential for reducing pesticides per crop, upon which, secondly, all the 'reduction potentials' were added up.

14 The policy on crop-protection agents was formulated by an inter-ministerial consultation group of the Ministries of Agriculture, of the Environment, of Social Affairs and Employment, and of Public Health. Various study groups provided the necessary technical information to the consultation group. For each agricultural sector, the study groups consisting of researchers and practitioners from the DLO-institutes assessed the potential to reduce the amounts of pesticides that were used, and suggested policy measures to incite such a reduction.
agents as such (LNV 1991:11). Unlike the first two objectives that were formulated notably from the perspective of environmental hygiene, the latter, most encompassing objective was not elaborated into concrete targets and measures.

| evaluation of solutions | In order to mitigate environmental problems associated with crop-protection 

i) the emission to the environment of toxic substances should be reduced, notably by applying stringent admission criteria for new substances and through a re-assessment of substances already in use (substance policy). 

ii) the amount of agents being used should be reduced, notably with regard to soil disinfectants (volume policy) and 

iii) the dependency on the use of chemical crop-protection agents must be diminished, by stimulating the development and availability of non-chemical crop-protection methods as well as their use. |
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Box 6.1. The governmental policy theory on crop-protection by 1990 as expressed in the MJP-G based on LNV 1990

Because of the central position of pesticides in Dutch agricultural practice, the realisation of the latter objective would entail radical changes in the production system. Such changes would make strong demands, according to the MJP-G, on all actors involved, because a practice that has evolved over several decades had to be “conscientiously ‘bent’ within a short time span” (LNV 1990: 66-67). The paper made quite clear that the objectives of the Plan were to be achieved without harming the conditions for a viable agricultural system, that is, without endangering the continuation of the sector as such. The continued availability of a sufficiently wide range of chemical substances for crop-protection was therefore a priori assumed. Furthermore, the required radical changes in implementing the Plan’s dependency-reduction objective should be “supported and brought about by the agricultural sector itself” (1991:11).

The approach to the issue that was adopted in the paper raised the question how to motivate the sector to develop and introduce alternative approaches to crop-protection.
Suggested options to achieve the MJP-G's objectives included various measures in the sphere of stimulation of research on alternatives, information dissemination and education as well as direct regulation. The Crop Protection Act as well as the Water Pollution Act and the (then) Nuisance Act offered a formal basis for such regulation."

Because of the previous experiences with papers on the issue, this time, the policy plan had been initially drafted without prior consultation with the farmer representative organisations. Only afterwards, the draft was submitted for comment to some 40 organisations and advisory councils - a break with tradition. Of these organisations, 27 responded to the request. In addition, 32 organisations provided comments of their own accord (*Tweede Kamer* 1990-1991, 21 677, no. 5). In general, the MJP-G met with considerable resistance on the part of the agricultural business community. Notably the policy intentions to prohibit specific chemical agents was criticised by the Agricultural Board and the representative organisation of the pesticides producers (Nefyto). They were worried that specific crop-protection agents might be banned before reliable alternatives were available. In their opinion, the policy should focus on reducing the negative side-effects of their applications (1990-1991:5). The two organisations considered the suggested policy measures counterproductive in realising the long-term objectives of the MJP-G (reduction of dependence on chemicals).

The various comments were taken into consideration in the discussion of the Plan in Parliament. The eventual text that was approved of by government did not deviate fundamentally from the draft, with one exception. Substances that were considered detrimental to the environment yet indispensable to agricultural production were not banned instantly. Instead, the *Collegium* for the Admission of Pesticides (CTB; see note 12, this chapter) was to decide on a two-yearly basis which exceptions to banning were admissible. Furthermore, the "admission policy" for new substances was to be elaborated and specified.

In the discussion in Parliament, several Members expressed the fear that because of the resistance from the very parties that were supposed to implement the policy, the objectives of the MJP-G were too ambitious. Therefore, they insisted on the drafting of a covenant between government and the agricultural community in order to ensure a proper implementation of the MJP-G (*Tweede Kamer* 1991-1992, 21 677, no. 10). The

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1 In addition to these Acts, also two statutory regulations offered legal possibilities for stimulating the desired changes: the *Structuurverbeteringsregeling* and the *Nationale Complementaire Regeling*.

2 The majority of the producers of in the Netherlands is represented by the Netherlands’ Foundation for Phytopharmacy (Nefyto). Of the 10.7 million kilograms of active ingredients of pesticides sold in the Netherlands, only 1.6 million kilogram was disseminated by licensed industries *not* represented by this organisation. The traders of chemical pesticides on their turn are organised in Agrodis (106 members). Both organisations keep close links (they are housed in the same building), but they operate on a strictly separate basis. Producers of ecological crop-protection agents have recently united forces in an alternative branch-organisation called Artemis.
covenant would preferably build on the Agricultural Board’s proposal for implementing the plan, which the Board had submitted days before the discussion in Parliament.

In July 1993, after intensive (informal) negotiations, the relevant Ministers and the representatives of the agricultural business community7 signed an “Implementation Agreement” (Bestuursovereenkomst) in which the objectives of the MJP-G were elaborated in detail. In contrast to the MJP-G, the Agreement also addressed the issue of the working conditions for people using crop-protection agents. The covenant’s implementation was to be co-ordinated and supervised by a co-ordinating commission (in Dutch: CUO), in which government and the agricultural business community were represented in equal numbers.

Furthermore, it was stipulated on the urgent request of Parliament that the MJP-G was to be evaluated “mid term”, that is, in 1996. In contrast to the annual goal achievement evaluations that were planned in the Implementation Agreement, this evaluation was to be extensively discussed in Parliament.

The suggestion to conduct an interpretive TA on the crop-protection issue

The Implementation Agreement entailed an “important correction” (Schreurs & Grin 1996:41) to the inherent intricacy in the envisioned implementation strategy of the MJP-G: On the one hand, the plan proposed changes in the practice of agriculture that were strongly opposed by the agricultural community. On the other hand, it relied strongly and explicitly on the co-operation of that very community to implement the suggested policy measures. The Parliament’s concern about the feasibility of the plan’s ambitions therefore was quite understandable. Yet, with the Implementation Agreement, the potential impact of the MJP-G was strongly diminished; it had “lost its edge” in the eyes of those who had initially championed the drafting of an encompassing policy plan on the issue (Van Esch, personal communication, May 3, 1999). Moreover, politically, in spite of the Agreement, the issue remained a hornets’ nest.

First of all, within the Ministry of Agriculture, there was some ambiguity about the desirability and the objectives of a policy on crop-protection and the way to achieve these. A major controversy concerned the focus of such a policy. Some were in favour of measures to intervene with the substances used in crop-protection. Such a “substance policy” could build on the existing legal structure for controlling the admission of agents, by including environmental notions in the assessment criteria (which until then mainly involved focused on human health; see above). Restricting the availability

7 Respectively the Ministries of Agriculture, of the Environment, of Social Affairs, of and Public Health and the representative organisations of farmers, of seed traders, of pesticide producers and of distributors of crop-protection agents.
of substances was hoped to form an incentive to the development of environmentally sounder alternatives, and to reduce the dependency of chemicals in general.

More conservative powers within the Ministry instead favoured a focus on measures to reduce the absolute amounts of agents used. Such a “volume policy”, it was hoped, could pacify the environmental ‘hawks’ that championed a drastic approach to changing crop-protection practices. It might diminish the need (and the political pressure) to ban specific agents, ensuring the future availability of a broad range of substances. These hopes were dashed to some extent, when in later parliamentary discussions on the MJP-G (and on the reorganisation of the governmental body responsible for the admission of substances, CTB), the principle of banning at least the most environmentally “critical” substances was included in the Plan. This would reduce the risk (feared, among others, by the Ministry of the Environment and various environmental organisations) that a volume policy might provoke the replacement of ‘bulky’ agents by others that require smaller quantities but are be more toxic (Reus & Faassen 1995).

Matters got politically more complicated when the initial list of some 10 to 15 toxic agents (the “dirty dozen”) was enlarged to include nearly a hundred substances. That development stirred some major opposition especially from the farmer representative organisations, including those who principally favoured a substance policy over a volume policy. Rather than a reduction of the dependence on chemical means, an increase of illegal use of banned agents was feared. To ensure an economically viable agricultural sector and an environmentally sound crop-protection practice, LTO (and previously the Agricultural Board) considered the availability of a broad range of crop-protection agents absolutely essential.

To further complicate matters, proponents of a stringent policy on the issue differed in their views on how to perceive of a ‘sustainable agriculture’. A sustainable agricultural practice could be conceived of as being realised at a systems level, in terms of a closing of the material cycles or at the level of the individual business unit, with a focus on reducing the negative effects of the business for the environment.

An additional intricacy was that responsibility for the crop-protection issue was shared among the four Ministries, which had co-signed the Implementation Agreement. Time and again, it triggered considerable power plays among these. To add to the complex situation, the Ministry of Water Management unofficially had also a say in the matter. When the MJP-G was drafted, the specific reduction targets were formulated on the basis of, among other inputs, the so-called “drift percentages”, that is to say, the (then) estimates on the dissemination of specific substances in surfaces waters.

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8 In Dutch, the matter was referred to as the issue of a breed middelen pakket. According to farmer representing organisations (initially the Agricultural Board, later LTO-Nederland), the problem was that farmers were confronted with too narrowly formulated (environmental) targets which they were supposed to meet within too limited a time. The organisations disagreed with the MJP-G’s underlying assumption that change is merely a matter of motivation on the side of the farmers.
Data on these percentages were provided by research institutes on water quality that were affiliated with the Ministry of Water Management (among which RIZA; see chapter 4). Via this construction, this Ministry was involved in the discussions on the formulation of the MJP-G too, and became a partner in the CUO committee supervising the Implementation Agreement, yet was not formally responsible for the MJP-G. As a result, the lee-way for the Ministry to influence the debate was de facto quite large; a situation of which various proponents of a stringent crop-protection policy in circles of water management and research were glad to profit.

Moreover, the legal basis for regulating crop-protection agents was inadequate to effectively implement the MJP-G suggestions. It was insufficiently equipped to invoke the envisaged changes with direct regulation. Moreover, it was ambiguous in its approach to the matter. The Crop Protection Act was formulated on the basis of a “yes-provided that” argumentation (application of a crop-protection agent is allowed provided that the specific substance is not banned). In contrast, the Surface Water Pollution Act, which unlike the Crop Protection Act had its origins in environmental policymaking (see chapter 4), was based on the “no-unless” principle: any potentially polluting activity is prohibited unless a licence for the action is granted. For the crop-protection policy issue, both acts were of relevance because of the pest control’s major environmental impact on surface waters.

The aforementioned dynamics in the institutional arrangements of the agricultural network also presented a complicating factor at the time. The dismantling of the Agricultural Board and the transfer of its representation tasks to the LTO-organisation caused some destabilisation in the sector. With the reorganisation, major players in the crop-protection arena lost their power base to some extent, which was not self-evidently compensated by the (new) representative organisation.

In addition, in general, farmers felt (according to the oral information that was collected for this case-study) that their interests were not represented adequately and, more importantly, that the representing organisations did not take their ideas and suggestions seriously. The attitude of the various farmers’ organisations, as well as of agricultural research institutes, which was of old based on education and knowledge dissemination, was considered rather belittling.

The aforementioned reorganisations in the extension institutes were not conducive to a smooth exchange of information at the time either. The possibility of ensuring the availability of a broad range of crop-protection agents, for instance, already was limited because of EU policy regulations of the early 1990s with which the Dutch policy had to comply. For lack of a proper information channel, farmers, however, by and large were not aware of this development. Because of the close interplay between pest control agents and other elements in the agricultural production system (such as fertiliser use, selection of crop, irrigation procedures, et cetera), a farmer’s entire business approach
was based on the assumption that, in case of calamity, specific substances were available. Suggested changes in the substance admission policy not only seemed to come from ‘out of the blue’ but also threatened to endanger a business firm’s very subsistence base.

Against this background, the suggestion to organise a comprehensive TA study on the issue of crop-protection was made. Some parties in the political hornet’s nest considered the MJP-G’s potential to actually improve the problem situation rather limited, because of its “in-built political compromise” (Faassen, personal communication, April 23, 1999). The Implementation Agreement reinforced this aspect of the initially so promising MJP-G. The proponents of a visionary, more stringent policy approach to agriculture then pondered different means to get their points of view across. It was in this context that the issue was put to the attention of the parliamentary TA organisation, the Rathenau Institute.

The Gideon project: an interpretive TA

The Rathenau Institute organises its agenda setting process via two tracks. Every two years, opinion leaders from various echelons in society are invited to discuss the issues that they feel are of a general relevance to the Dutch society. In addition, the Institute’s Board is consulted in view of the agenda setting process. In the early 1990s, such people as Wouter van Dieren (of IESA, see chapter 4) and members of the NRLO (see chapter 5) were among the Institute’s sparring partners who suggested crop-protection as a research topic. Simultaneously, members of the Board made a similar suggestion. One of them, a professor in crop physiology and plant production systems, who was affiliated with the Ministry of Agriculture as well, was a fervent advocate of a systems approach to dealing with environmental aspects of crop-protection (Rabbinge et al. 1989).

A project on crop-protection and sustainable agriculture fitted well in the specific objectives of the Rathenau Institute’s programme on ‘technology and sustainable development’. These objectives were derived from the (then) state of the art of Dutch environmental policy as reviewed by the Institute (Rathenau Institute 1994b:19-21) and included the desire to explore a variety of interpretations and contingent elaborations of the ‘sustainable development’ concept, and to explore new policy approaches to promoting such a development.

Preliminary research and organisational activities

It is the Rathenau Institute’s standing practice to conduct an orientation study before launching a major programme on a subject. In this case, the study was contracted out
as the Institute itself felt it was lacking in expertise on the topic of crop-protection. The Research Centre for the Philosophy, History and Social Aspects of Science of the Free University in Amsterdam was assigned to conduct a preliminary study to explore the topic. The study was based on interviews with prominent actors in the field of agriculture and crop-protection, and provided an overview of relevant issues and concerns (Brandt & Groenewegen 1994). It also outlined various research questions.

On the basis of this study, the decision was made to set up a project on 'sustainable crop-protection'. The TA project was to be conducted “interactively”, in close consultation with the actors who held a stake in the crop-protection issue. The topic was considered suitable for employing the Interactive Technology Assessment (ITA) approach as developed by members of the Public Administration Department at the University of Amsterdam, in which the Institute already had expressed an interest. The method was considered appropriate to deal with the complex institutional setting and the widely diverging views of the stakeholders. Moreover, the Rathenau Institute had a tradition of experimenting with new methods for participatory TA. The ITA was certainly new. Although it had been theoretically elaborated thoroughly, and some parts of the method had been empirically tested and refined, it had not been put into practice on a scale such as of this project.

Because of the methodical considerations, the Department of Public Administration at the University of Amsterdam was asked to participate in the project as a sub-contractor, while the Research Centre of the Free University in Amsterdam that had conducted the preliminary study was the project’s main contractor. For its expertise on the subject matter, which both Amsterdam based research groups lacked, the Centre for Agriculture and Environment (CLM) in Utrecht was asked to participate as a second sub-contractor. The three research groups jointly set up a project team of three senior and four junior researchers. Furthermore, at the Rathenau Institute, two staff members (one senior and one junior consultant) were charged with supervising the project, which by that time was called Gideon.

Institutional setting

The Rathenau Institute intended the Gideon project to be an illustration of the new course in advising on technological development that it had recently adopted. When the institute was founded as an advisory institute to the Dutch Parliament in 1987, under the name of the Netherlands’ Organisation for Technology Assessment (Nederlandse Organisatie voor Technologisch Aspectenonderzoek, NOTA), its mission was to “broaden

19 In its previous form, as the NOTA-institute (see below), it had pioneered in elaborating the CTA approach (Daey Ouwend et al. 1987).

20 Please note the difference between the abbreviations of the Centre for Agriculture and Environment (CLM) in Utrecht, which was involved in the project that is discussed in this chapter, and the CML in Leyden that conducted the environmental research on NPFs presented in the previous chapter.
the decision making process on science and technology, both in terms of aspects covered and actors involved. This policy objective had been expressed in a 1983 White Paper on integrating science and technology in society (Tweede Kamer 1983-1984, 18 421, no. 1 and 2). The installation of an independent TA institute was considered the primary means to achieve that goal. The institute’s independence was guaranteed by affiliating it organisationally with the Royal Academy of Sciences.

Ever since its installation, the organisation’s mission and objectives were subject to a continuous internal debate. In its earlier years, the institute had put an emphasis in its projects and methods to discussing and influencing technology development from a societal perspective. In 1994, the institute changed its mission in favour of a more explicit role in instigating and influencing public debate. The organisation’s TA-studies were now understood as interventions in an on-going process of public opinion-forming.

The shift in emphasis was underlined by a change of name and involved a methodical shift towards more participatory approaches to organising TA projects. The projects were now designed with the intention to contribute to political judgment on the part of the participants and of Parliament. To that end, the Institute planned to present each project’s findings in a specific report. Unchanged remained the organisation’s independent position, which contributed strongly to the Institute’s reputation. The institute was appreciated for producing trustworthy and rigorous studies notably in the fields of biotechnology and information technology.

The change in the organisation’s mission coincided with the preparations of the project on crop-protection. The project was the Institute’s first participatory TA experiment in which not only solution strategies and policy options were being discussed (as had been done previously), but in which also the problem definition itself was put up for discussion. The ITA method employed was to make the project a test case for understanding what exactly was to be the Institute’s role in organising opinion forming to inform political judgment. In order to contribute effectively to the Parliamentarian

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21 The change in name from NOTA to Rathenau Institute was motivated by the fact that the Dutch translation of technological assessment, which was included in the former abbreviation, includes the word ‘research’. This was considered to bear the wrong connotation given the new mission. The new name honoured the late professor Rathenau who was one of the pioneers in promoting analysis-supported debate on science and technology.

22 As concerns its role in stimulating social debate, the institute stressed that it is not possible to organise ‘the’ debate. Societal debate is considered a continuous process taking place in a variety of arenas. Rather than organising ‘the’ debate, the institute saw as its task to “catalyse” various debates that take place in different circles. Therefore, it sought to contribute to clearly formulating structural questions that are concerned with developments in science and technology. In the late 1990s, this aspect of its mission was gaining more attention (again) in discussions on the role of the institute (Van Eijndhoven 1995).

23 The Rathenau Institute’s (concrete or potential) contribution to parliamentary debate is a recurrent discussion topic, both inside the Institute and among Members of Parliament. In the late 1990s, the chairperson of Parliament called on its members to make use more frequently of the Rathenau Institute’s expertise to support opinion forming.
debate, the project was timed to present its findings on the occasion of the mid-term evaluation of the MJP-G.

Preparatory stage

The Gideon project was set up with the ambition to demonstrate how innovations might be brought about successfully that were in line with the long-term objectives of a sustainable agriculture (Rathenau Institute 1994a). Soon, this ambitious objective was reformulated into “gaining insight in the perspectives on a sustainable crop-protection and on the development paths along which such crop-protection could be realised”, both among those directly involved in the issue and among relative outsiders, with the aim to explore possible syntheses among these perspectives (Rathenau Institute 1995a). In the management plan that was drawn up to give guidance to the project in a practical manner, this objective was further exemplified: “In particular, the project is about searching for new forms of consensus which can break through the current technological regime” (Rathenau Institute 1995b). The Institute hoped that by employing the ITA method, the various parties that approached the issue of crop-protection from widely differing perspectives could come to see how exactly they related to one another. This clarity could help the formulation of solutions to problems associated with crop-protection on a more fundamental level than was the case in the MJP-G.

The method was based on the constructivist methodology as outlined by Guba and Lincoln (1989, see chapter 3 this book). The primary function of ITA as intended by its developers was to contribute to “the influencing of (technological) development paths in a direction desired or at least accepted by the parties affected by the technology” (Grin et al. 1997:12). To that end, the perceptions of the (potentially) involved actors of a technology at stake were to be taken as a starting point for assessing the issue under scrutiny. Thus, the approach meant to do justice to the plurality of perspectives that dominate a specific field.

A first step to be taken by the project team, therefore, was to become acquainted with the research field. A newcomer in the area of agriculture, the Rathenau Institute as well as (two partners in) the project team lacked insight in the technical aspects of crop-protection and in the on-going, intricate process of political wheeling and dealing with respect to the issue. The junior team members were sent out to interview various relevant parties after they had received a specific training for the purpose.4

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4 The staff members were trained to use the analytic tool, developed by Grin and Van de Graaf to analyse an actor’s interpretive frame (handelingstheorie, see chapter 3, this book) as well as its accompanying interviewing technique. The quintessence of the technique is to collect information on the four categories of motives that underlie an actor’s actions by either directly inquiring into these, or by asking questions about the underlying assumptions (Grin et al. 1997:62).
About 60 interviews were conducted to identify the “claims, concerns and issues” of stakeholders to serve as a starting point for the actual analytic process. In addition to the interviews, literature study and document analysis were conducted. These initial research activities were also meant to build a team out of the group of individual researchers, with a shared understanding of the methodological presuppositions that underlay the project.

In spite of the team-building efforts, the group dynamics were complex and the researchers did “not manage to grow into a real team” for various reasons (Groenewegen, personal communication, April 4, 1999). More importantly, it proved quite difficult for the various members, who came from a wide variety of disciplinary backgrounds (among which biology; civil engineering; social sciences and the policy sciences), to incorporate the method’s rationale in their approach to the issue.

The novelty of the constructivist approach to analysis and the underlying research presumptions were not only a challenge to the individual members of the project team. The adopted approach was puzzling and at times bewildering to the Rathenau Institute, and especially to the members of the project’s advisory board.

The advisory board had been installed at the onset of the project to provide expert input in the analytic process, and to comment on the project’s progress and findings. The board was considered an “accompanying group” (begeleidingscommissie) rather than an advisory board (klankbordgroep) by the Rathenau staff that supervised the Gideon project. Yet, formally, it was in a position to merely give advice to the Institute and, via the its staff, to the project team. As a result, the responsible Institute’s staff members functioned both as a buffer and as a ‘linking pin’ between the two deliberation structures.

The 16 member advisory board consisted of representatives of the Ministries of the Environment, of Agriculture, and of Water Management, as well as of the Agricultural Board (Landbouwschap) and LTO-Nederland, a member of the Collegium for the Admission of Pesticides, representatives of the phyto-pharmaceutical branch organisations, agricultural technology experts and so on. The majority of these had been personally involved in the initial discussions on the MJP-G.

The involvement of contributors to the MJP-G discussions in the project’s advisory board was not a coincidence. It was a conscious strategic choice by the project team to enable these stakeholders’ involvement in the project, yet to keep them somewhat at bay from the actual analytic process. That process was to be carried out in consultation with knowledgeable stakeholders who were yet relatively unfamiliar with the political sparring match on the issue. This choice was motivated by the wish of the project team members to overcome the “dead lock” situation that the agricultural sector in their eyes was in. This dead-lock was caused by “the fact that societal developments implied that established agricultural practice could no longer be continued, while changes in these
practices were blocked by existing social structures” (Grin 1998:17). To formulate and implement solutions to the current crop-protection problem, this impasse was to be breached. That goal might be achieved, the analysts argued, if new and far-sighted ideas were brought into the discussions so as to induce reflection on the then-current, self-containing and recursive perceptions of the issues at stake.

Selection of participants

The above line of reasoning to overcome the impasse in agriculture implied a first leading principle for the selection of participants. Not the big-shots who dominated the debate on crop-protection were to participate in the analytic process, but “second circle actors” that is, people from the “shop floor” rather than the general management or their representatives. The idea was that over the past fifteen years, time and again the same small group of actors (organisations as well as people) in the agricultural network had discussed the situation in a highly polarised setting. As a result, most options for change, in every variation possible, were by and large discussed and rejected. To give change a chance, it therefore made sense to invite other actors beyond this group of regular discussion partners and, in so doing, to avoid “the usual strategic games” (Grin, personal communication, October 19, 1999).

An equally relevant motivation to include relative outsiders in the project was that in that way genuinely innovative and creative ideas for provoking change might be brought to the fore. In the eyes of the project team, a comprehensive approach to the issue of crop-protection was imperative. Because of the coherence between the various aspects of the agricultural production system, the omission, adjustment or replacement of pesticides as such might imply the need for change in other aspects of the production system as well. Vice versa, if farmers were to change their crop-protection strategy, the institutional context of agricultural practice might have to undergo changes as well. In the eyes of the project team members, the knowledge infrastructure as well as the processing industries, the trade organisations, auctioneering organisations and supply industries of seed and technical equipment et cetera, with their actions all contributed to the leeway that the individual farmer has for accomplishing change. Therefore, the team argued, farmers were not the only change agents. A project on a sustainable crop-protection should include actors from the entire agricultural food production and distribution chain.

In addition to these broad inclusion principles, the actual selection was to be made on the basis of the meta-criterion that the totality of the group was to represent a wide variety of viewpoints on the acceptability and feasibility of potential solution strategies to the current unsustainable crop-protection practice. On the basis of these three considerations, the following criteria were to guide the actual selection:
overall, actors should represent various positions concerning the *problematique* of sustainable crop-protection, including the entire production – distribution chain; there should be a plurality of perspectives within each position; overall, variety in agricultural sectors (open vs. closed cultures) should be ensured; selected persons should be supportive to the idea of frank and open, constructive dialogue (see Groenewegen *et al.* 1996:29).

The selection principles and criteria were designed to prevent the analytic process from resembling the agricultural arena in the real world in which strategic games were the order of the day (Grin 1998). The issue of participant selection was therefore considered of great significance to the character of the Gideon project and was extensively discussed in the project team.

Yet, in practice, it proved difficult to apply the criteria in the way that was thought necessary. The networks of the Rathenau Institute, the Ministry of Agriculture and members of the Gideon project’s advisory board as well as of the project team (especially CLM) served as a starting point for identifying potential discussion partners. Thus, different discussion circuits were approached. Still, because the crop-protection issue is so complex, often candidates did not consider themselves technically sufficiently equipped to get engaged in the project. As a result, many of the eventual farmers and growers that participated as “people from the shop floor” were in one way or another involved in farmer representing organisations, such as the LTO-study groups.

The project team tried to conscientiously deal with the strategic games that were inevitably involved in the naming of candidates. It considered the final selection well-balanced and compliant with the overall selection criteria (Grin, personal communication, October 19, 1999). Only the involvement of environmental organisations was considered sub-optimal.

*The analytic process*

From the group of the initial 60 interviewees in the preliminary research that were identified on the above grounds, participants for later phases of the Gideon project were recruited. In addition to the aspect of selecting participants, the preliminary research affected the actual analytic process in two ways.

First of all, the research provided an overview of the ‘claims, concerns and issues’, which were considered relevant by the interviewees with regard to the topic of crop-protection, as well as the various parties’ problem definitions. The project team used a coding technique based on the “grounded theory” approach to data collection (cf. Strauss and Corbin 1990) to organise the findings into some twenty issues for further research, covering five themes: the technical aspects of crop-protection, the environ-
mental risks of pesticides, issues of agrarian management, the policy process on crop-protection and the economic ‘chains’ involved in agrarian production. The issues set the agenda for further inquiry in the subsequent steps in the analytic process. In addition, the findings from the preliminary research influenced the actual analytic process in a way that was not intended by the project team.

When the findings of the preliminary study were sent to the advisory board, “hell broke loose” (Groenewegen, personal communication, April 4, 1999). Not aware of the project team’s intentions with the preliminary research activities, the board was annoyed by the quality of the texts. These were considered below quality standards and bristling with factual mistakes. This first exchange of information between the project team and the advisory board, which many in hindsight call “unfortunate”, set the tone in the further communication process between the two. In retrospect, it is clear that the communication problems stemmed from a fundamental misunderstanding about the methodological and strategic intentions of the Gideon project.

To pacify the board, the Rathenau Institute urged the project team to revise the texts. It was then decided to publish these in the shape of five separate reports (as so-called working documents). The choice to go public with the initial findings had a far-reaching impact on the analytic process. The writing of the documents now became a goal in itself rather than a means by which to organise the analytic process. This put heavy demands on the time and energy of the project team. More importantly, the intention to reach a wider audience implied that the contents of the documents had to be convincing and “correct”. While the Rathenau Institute had a reputation to conduct trustworthy and solid research in various fields, the crop-protection area was not among these. The reports hence inevitably came to function as a means to establish the Rathenau Institute’s credibility as a sparring partner in the crop-protection debate. Some major parties in the crop-protection network were not too eager to welcome a new player in the field, and were known to have discouraged the Rathenau Institute in setting up the Gideon project in the first place. In this sensitive context, the demands that were made on the contents of the Gideon working documents were high.

The preliminary research had been conducted on the basis of the constructivist principles for research. As said, the findings were meant to provide an overview of the various perceptions held in the field of the crop-protection issue. The results as such did not entail an analysis of the situation under scrutiny, nor were they intended to do so. The eventual working documents therefore inevitably contained mere state-of-the-art descriptions of the issue. Information on the methodological approach that was adopted in the Gideon project in the documents was limited to a remark in the foreword of each of the booklets that “the contents of [the] working documents provided the starting point for a discussion with and among participants to the Gideon-project” (Van Eijndhoven [foreword] in Schreurs & Grin 1996). As a result, in the eyes of the in-
tended audiences, the reports contained “nothing new” (Otenheim, personal communication, December 1, 1998). In the highly expertise-laden field of crop-protection, the unfamiliarity of the project team with the issue was considered a weak trait, which allowed the parties that were not pleased with the contents to dismiss the reports as “gross oversimplifications”.

The (senior) members of the project team considered the criticism an expression of the strategic games that were being played behind the project’s scenes (Grin, personal communication, October 19, 1999). The fact that, eventually, four of the five documents were published and that the advisory board acknowledged the correctness of the factual contents was considered evidence of this point of view.

The critical reception of the results from the first analytic activities for some of the (junior) members of the project team was rather discouraging. The methodological premises on which basis the Gideon project was set up were tried, when for personal reasons, two junior members left the team. With their departure, a part of the expertise and sensitivity for the issue at stake that was built up during the preliminary research was lost.

Unintentionally, with the publication of the preliminary results, the Gideon project found itself in the middle of the crop-protection’s hornet’s nest. The decision to seek credibility as a discussion partner on substantial grounds, rather than by emphasising the project’s contribution to the on-going debate on methodological grounds, affected the analytic process at the time of disseminating its findings as well.

Encouraging an orientation on the future

Regardless of the strategic implications, the preliminary interviews provided insight in the problems as perceived by a wide variety of stakeholders. Furthermore, it shed a light on the positions of the relevant actors within the field and the relations between them. On the basis of these findings, a first round of in-depth interviews was planned. About 27 people were asked to reflect on several topics with regard to crop-protection, the problems they perceived and the long-term solutions to these that they considered feasible. The interviews were conducted with the intention to “reconstruct the interviewees’ action theories [i.e. an actor’s interpretive frame],” that is, “the whole of the beliefs ... by which an individual constructs his interest and the preferred action options in a given situation” (Grin et al. 1997:32-33).

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All four documents featured the disclaimer that “[t]he advisory board [had] assessed the correctness of the working documents of the Gideon project (...). The perceptions and opinions in this report are the responsibility of the researchers and the Rathenau Institute.”
Organisational focus

At this stage, the interviewees were chosen to especially include actors involved in the primary production process. As was planned, the interviews resulted in a thorough understanding of the problems with crop-protection as defined by the various stakeholders. Much to the project team's surprise, however, the interviews did not result in suggestions for improvement of the perceived problems. Instead, a common denominator in almost all interviews was the large amount of barriers for improvement that the interviewees voiced.

The project team and the project supervisors of the Rathenaup Institute had expected the initial round of interviewing to result in creative suggestions for long term solutions to the encountered problems. This expectation was based on the fact that the long-term perspective was the very topic of the interviews, and was believed to be stimulated by the way in which the questions were phrased. However, the interviewees were considerably more successful in outlining, in detail, the barriers to sustainable crop-protection than to formulate options to overcome these.

By way of providing a solution to this unexpected event, the project team used the results from the interviews to formulate some 15 options for action that together, in specific combinations, could contribute to solving the problems that were voiced by the interviewees and to overcome perceived barriers. To that end, the team made an effort to construct the options for actions in such a way that each entailed a solution to various problems of a number of parties, by taking into account the possibilities for change that were implied by the actors' interpretive frames.

A first strategy to check the formulated options for action was to submit them for comments to the discussion partners in a second round of interviews. Due to shortage of time, and from fear of troubling the interviewees too much, these interviews were conducted over the telephone. By way of preparation, the interviewees were sent a document in which each option was described in relation to the problems it was intended to solve. Furthermore, the document indicated which party 'owned' the specific problem. The possible disadvantages and problematic aspects of each option were also indicated. Each interviewee was asked to react to those options for action that touched on his or her professional practice, or which the project team expected him/her to find the most difficulty with. In addition, the participants were free to react to the other options for action.

On the basis of the findings from the interviews, the project team formulated three so-called "images of desirable futures" (streefbeeld) of agriculture that were accompanied by several options for realising these. To the project team, a streefbeeld was "an image of the future situation of agricultural practice that was desired by an actor" (Rathenaup Institute 1995c). The images were called "ideal-typical", yet were considered to be feasible given specific changes in technological development, institutional em-
bedding et cetera. Furthermore, the project team considered these images as ideal-typical as the interviews showed that actors generally expressed views that related to a mixture of the three formulated future visions. The suggested options for action were reformulated into "building blocks" that together, in specific combinations, could constitute the trajectories by which the desired ideal-typical future visions could be realised.

A second strategy to deal with the unexpected lack of suggestions for solutions strategies was to consult the members of the advisory board. To that end, a regular meeting of the advisory board was organised as an interactive workshop in which the members were asked to comment on the formulated options for action and to "creatively think along with the members of the project team" about solutions to the current unsustainable crop-protection situation. After a short plenary introduction of the three future visions, they were elaborated in three parallel sub-group discussions.

A third strategy to support the formulation of a long-term perspective on the problem situation was the organisation of a workshop. A plenary session with the Gideon project participants had been planned at the outset of the analytic process as a means to organise feedback on the intermediate results. This meeting was now redesigned into a "future-oriented workshop".

Closure

The workshop was held in February 1996. The intended end-product of the Gideon project at this stage was a sketch of a future image of a sustainable crop-protection practice in Dutch agriculture, together with an overview of the activities that were required to realise the envisioned future situation. The project team and the Rathenau Institute were well aware of the fact that the resulting projection of a future sustainable crop-protection had to be a feasible one. Yet, at the same time, the project team did not want the project to result in a depiction of a future situation that would be considered feasible in terms of the then-current practice. The challenge, it was acknowledged, was to overcome the current stalemate situation by providing a (set of) solution(s) that were defined in terms of a future, more sustainable perception of crop-protection.

Seen in this light, it was not very surprising after all that the interviews had not yielded suggestions for improvement as the interviewees all argued on the basis of the their perception of the here and now. The challenge for the workshop hence was to find a way to 'lure' the participants into a more creative and open-minded approach to the issue. A second challenge, in addition, was to ensure that the stirred creativity would not result in suggestions for action or in depictions of the future that were too fantastic

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Footnote: To the Gideon project team, a long term perspective on crop-protection entailed a period of about 25 years whereas the period that was discussed in the MJP-G (up to the 2000) was considered the short term (Rathenau Institute, 1995-d).
or far-reaching and thus would be of no consequence for the developments in the ‘real world’ outside of the analytic setting.

In order to meet these challenges, specific precautions were taken. The workshop was organised as a two day arrangement in a remotely situated conference centre, away from the hectic of the participants’ daily work. Care was taken to invite the most creative and far-sighted people that the project team had met in the interview rounds. Furthermore, the aid of a professional facilitator was invoked who worked according to the “future perfect method” to incite the required state of mind among the participants.

The workshop started with a brief motivating plenary welcome session. The participants were asked to think for about 15 minutes in order to come up with a dream about the agricultural practice of the future, yet formulated in the present tense. Such a dream was possibly begun with: “It is now 2030, and my grandson is taking me for a tour around his farm (which used to be mine) and to the supermarket....” (cf. Grin 1998). In this way, participants were invited to formulate their personal views on their individual future. Subsequently, the group was split into sub-groups of 8-10 participants with the assignment to integrate their individual future visions into a more or less shared vision, or in two such visions that were each shared by a number of the participants. The sub-groups were organised to each include actors who in their professional practice operate in different positions within the agricultural network. The project team members chaired the discussions. They made an effort to create and maintain a non-offensive, creative atmosphere by actively stimulating people to speak their minds and to request others to let them do so. The participants were explicitly instructed to have an open-mind for non-conventional ideas and were called upon to formulate innovative ideas.

The project team was aware of the risk that success in the latter respect might yield results that were not considered viable and feasible in the world outside the conference centre. To meet this challenge, the project team had given much thought in advance to setting the rules of closure, that is, to formulating criteria on the basis of which topics that were put up for discussion were in- or excluded in the Gideon project. These criteria had been decided upon at the preparatory stage of the project, and were agreed upon both by the project team and the Rathenau Institute. The rules of closure had been communicated to the participants in the letter of invitation, and were again explicated at the beginning of the workshop.

The closure criteria were formulated in such a way that they could keep the project’s activities focused on the objective of sustainable crop-protection, and at the same time ensure the outcome to fit in the context in which the MJP-G was formulated and evaluated. To that end, they were derived from the meta-problem as formulated by Parliament in the discussions on the MJP-G. This problem definition included two stipulations that at first sight seemed to be mutually excluding: On the one hand, in the long
run, the Dutch agricultural sector should offer worth-while employment opportunities for farmers-as-independent entrepreneurs, on a scale not significantly smaller than anticipated in 1995. On the other hand, the Dutch agriculture in the long run (2030) should respect the demands of sustainable development as elaborated in the Dutch Environmental Policy plan of 1989 and its successors.

Conditions for learning

The seemingly contradictory stipulations not only set the rules of closure. They also indicated the substantive challenge that was the heart of the analytic project. The participants had to make a major leap away from their usual approach to the issue, and it was the project team's task to make them do so.

The participants received some written material about the workshop and its intentions only shortly (1-3 days) in advance. This was done deliberately, so as to prevent the participants from discussing the contents at length with their respective organisations beforehand. Together with the secluded setting somewhere near nature, this was hoped to induce the participants to adopt a 'fresh' look on the issues that were to be discussed.

The workshop is assessed differently by various participants, and so is the extent to which it indeed encouraged those attending to adopt an open mind to the issue of crop-protection. Some of the participants that were interviewed for this case study saw the adopted approach, and especially the visualisation assignment, as a good way to make explicit previously implicit notions in their own perception of the problem. Notably the choice to make the workshop last two days is appreciated as being conducive to inducing reflection and creativity: "The most endearing ideas were formulated during breakfast, so to speak" (Van Esch, personal communication, May 3, 1999).

In general, however, participants indicate that in spite of the methodical and practical ploys, the future-oriented workshop was characterised by the traditional exchange of the familiar points of view. Participants were rather headstrong in sticking to the here-and-now, and to discussing the technical feasibility of proposed developments. In general, participants insisted on applying common sense to the issues under scrutiny. The more specified the topics of discussion were, in terms of technical feasibility, the more conservative were the participants in their utterances. A specific reason for that development was that according to the fantasy of a relatively large number of the participants, the most desirable "future farm" was based on an ecological production mode. Others in turn strongly disapproved of such a projection of the desirable future, and even suspected the Gideon project of specifically favouring that mode of production as a solution to the current non-sustainable production system. Their inputs triggered rather heated discussions on the feasibility of such production systems.

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7 At that time, employment in the agricultural sector was known to be declining by about 1% annually. See also chapter 5, this book.
During the two days, gradually the initially formulated individual visions of a sustainable crop-protection were reformulated (in sub-group sessions and plenary meetings) into three future visions that each made sense in the eyes of a number of participants.

**Keeping a power balance in the analytic process**

The project team integrated the three visions with the options for action that had been generated during and between the two interview rounds. To that end, the options were grouped into coherent development paths comprising both a long-term objective and specific steps to be taken on the short and mid-term in order to realise these objectives. Each development path was set down in a document. These documents indicated what problems had not yet been solved, what new problems the envisioned actions entailed, and what issues had not yet been agreed on. In the documents, these issues were linked to the three future visions in a manner that the project team considered consistent and meaningful. The next step was to check these results with the project’s participants and to adapt them according to their views. To that end, a month after the future-oriented workshop, a next interactive session was organised.

For this “working conference”, a different group of people was invited from the initial 60 interviewees and some ‘new’ stakeholders were additionally identified on the same selection criteria. This time, the participants were also selected for their relative stature in the agricultural network. Still, the project team insisted to invite people from the shop floor rather than from management positions. The advisory board strongly insisted on inviting at least a significant number of representatives of the agricultural and horticultural organisations, to prevent the “danger of the impression that one talks about the agricultural sector without consulting the sector itself” (Rathenau Institute 1996a). Eventually, the disagreement was more or less spontaneously dissolved as the “practising farmers” that the project team welcomed to the workshop were mostly recruited from the administrative network of the farmer representing organisation (LTO) at grass-root level. In general, again, the ambition was to include a large variety of perspectives. In addition, a few “strategic thinkers” were invited.

Shortly before the conference date, the participants received the workshop’s working papers that included two documents on respectively the future visions and the accompanying development trajectories. The working conference began with speeches by experts on issues that were considered of relevance for the development of the agricultural sector in the long run. This element in the conference’s agenda was included on request of the advisory board that was beginning to feel rather uncomfortable with the proceedings thus far. It felt that the analysis was lacking a sense of reality. The invited speakers therefore were asked to sketch the structural limitations of potential sustainable crop-protection practices, so as to contribute to the feasibility of the solutions that were to be generated and discussed later. The speakers addressed, in a 15 minute
speech each, the expected developments in the export market, the expected developments in consumer preferences and the impact of (EU) policy on Dutch agriculture respectively.

The project team had not been in favour of inviting the speakers for the opening session of the conference. It feared that the information provided to the participants might not promote the kind of creativity that the analysts hoped for. Therefore, by way of preparation, the speakers were handed over a five-paged document in which the objectives and intermediate results of the analysis thus far were outlined. Furthermore, they were briefed personally, in a 30 minutes telephone call each. However, in their speeches, not all of the speakers gave evidence that they were sensitive to the project's intentions of focusing on creative solutions rather than on underscoring barriers for change.

Upon hearing the opening addresses, the participants were invited to indicate the degree to which they saw the proposed future scenarios that the project team had drafted on the basis of the previous workshop as "realistic, desirable and contributing to sustainable crop-protection." The objective was to arrive at joint conclusions. Again, the participants were stimulated to be creative and open-minded. A professional process manager who had a significant and demonstrable affection with the agricultural sector chaired this session. In her introductory remarks, she invited those present to "step in a boat together [as] we will sail off on wild waters; you do not know these waters yet and we will have to see where we'll end ... You will find no trodden paths here today, as it is you who will have to help find the way" (Rathenau Institute 1996b, my translation). Thereupon, the participants were asked to critically reflect on the sketched scenarios, both in sub-group discussions and in plenary meeting.

The ensuing discussions at times were creative. At other moments, they were rather "polarised" (Van Esch, personal communication, May 3, 1999). An informant for this case study who took part in both the future-oriented workshop and the working conference clearly recalls the difference in atmosphere between the two. Specific group dynamics were set in motion during the latter conference, when in the discussion on an ecological production system a manager of a leading super market company in strong wording rejected the "ecological" scenario. The company had outspoken views on the issue of crop-protection. These were part of its policy to serve specific segments of the consumers' market in response to the consumer's demand for ecologically produced fruits and vegetables. The increasing demand for this kind of produce incited the company to formulate the ambition to implement the objectives in the MJP-G by 1995 rather than by 2000. To realise this ambition, together with objectives concerning fertiliser use, the company had arranged its own network of suppliers. Farmers were contracted to produce crops on the basis of the environmental standards that were set by the retailer company. With its strategy of contracting farmers, as well as with the "pro-
gressive" ambitions with regard to fertiliser use and environmentally friendly crop-protection, the company had made "many enemies in the agriculture sector" (Hofmans, personal communication, May 19, 1999).\textsuperscript{18} The company's criticism in the Gideon project's working conference\textsuperscript{19} mainly focused on the technical aspects of the scenario that was put up for discussion. Although the company was convinced that an ecological agricultural production system "is absolutely feasible", it strongly opposed to the idea of a stringent governmental policy on production modes.

The farmers who participated in the sub-group session (some of them themselves producing crops according to ecological standards) were either not convinced of the feasibility of implementing such a production system on a nation-wide scale or were too "timid" to come forward with arguments in favour of the scenario (Kolk, personal communication, May 7, 1999). As a result, the ecological scenario was abandoned as being not realistic.

**Safeguarding the project's integrity**

The working conference resulted in rather inchoate observations, remarks and comments that in the following weeks were integrated into two coherent scenarios for achieving a sustainable crop-protection practice. The integration of the findings was done by the project team in close consultation with the Rathenau Institute's project supervisors and members of the advisory board. Discussions with these contributed to the interpretation of the results, which came to be understood as representing two possible scenarios for sustainable crop-protection.\textsuperscript{20}

The results from these rounds of interpretation and discussion were written down in a draft version of the final report. This draft was put up for discussion during a public meeting. To this meeting, which was called an "open day," all those who had participated during the previous stages of the Gideon project were invited, as well as other stakeholders that were interested in the subject. In total, 260 organisations and individuals were invited. In particular, the Rathenau Institute took care to invite Members of Parliament.

The open day was intended to provide a final check on the draft report (which at that time consisted of a mere collection of ideas and suggestions rather than an orderly report). In addition, it was meant to provide the project team with an occasion to check

\textsuperscript{28} The large super market company in question had not meant its ambitions with respect to an environmental sound crop-protection to become public knowledge. Still, news accidentally leaked to the press, as a result of which the company was exposed to some serious criticism.

\textsuperscript{19} The retailer's points of view came across quite clearly in the working conference setting, as on request of the company's manager who was initially invited to partake, a manager of the retailer's supply network who serves as a technical advisor to the company was also invited.

\textsuperscript{20} The advisory board had welcomed almost unanimously the working conference's suggestion to drop the ecological scenario. An informant, who at the time sat on the advisory board, was convinced that the discarding of the 'ecological scenario' was the doing of the board itself.
how the report would be received among the parties that dominated the crop-protection arena. It was anxious to know how the project and its findings might be used and abused in the strategic games that were being played “in the real world” (Grin, 1998).

The events during the open day were rather chaotic. The chairman for the day set the tone by inviting the audience “to shoot” at the tentative results, calling on the public to “tell the project team how to do a better job.” Although intended as an incitement to trigger creativity and constructive suggestions, it was understood by some of the members in the audience to ‘shoot’ the text to pieces. The discussion took place in three parallel subgroups on three themes (crop-protection policy; environmental objectives; agrarian management). Because of the large number of people (55) that were attending, there was little opportunity to elaborate on text details during the discussion sessions. As a result, the meeting did not lead to specific amendments in the document that was put for discussion that day but resulted in general remarks on the current crop-protection situation and its possible future.

Further refinements and amendments were made in the months following the open day on the basis of the interactions with the advisory board. Even with the exclusion of the ‘ecological scenario’, the board by and large felt that the project’s results were not very feasible and, to the extent that they were feasible, not very innovative. The general attitude was one of annoyance with the Gideon project’s outcome. Those who had been sceptical from the very start considered the project a conformation of the (“our”) analysis on the basis of which the MJP-G was drafted. Other members, to whom the project once seemed to provide an opportunity to re-open the debate on crop-protection that was closed “nail-solid” with the Implementation Agreement, also expressed disappointment. Although they acknowledged the innovative character of the Gideon project, they feared that the findings would hold up in the political debate, for lack of analytical rigour of the underlying research.

Each from its own different perspective, the two types of criticism amounted both to a call for a scientifically rigorous elaboration of the project’s findings. To some, the lack of “hard data” rendered the findings dismissible. As a consequence, the report had the effect, as one of the advisory board members put it, of a “Christmas message as formulated by the queen: all good intentions and best wishes, without practical ideas and means to show for it” (Ottenheim, personal communication, December 1, 1998). To others, that attitude was exactly the reason why the report was in need of more analytical detail. It was hoped that an empirical-analytic elaboration would add to the finding’s convincing power. Therefore, even at its final stage, members urged the Rathenau Institute to abandon the qualitative approach to analysis that was adopted in the project in favour of a more quantitative one. The Institute’s project supervisor had to remind the board of the objectives and intentions of the project and the motivation for adopting the employed methodology for research in the first place.
The project's outcome and results

The outcome of the project was a sketch of two scenarios of a sustainable crop-protection system in the Netherlands in the long term (about the year 2030). The first scenario was called "chemical refinement" and basically entailed a development in line with current state-of-the-art know-how that would come up with technical solutions to the environmental problems that were associated with crop-protection. The second scenario, which was called "system oriented prevention", in contrast, involved a change in production practice. Crop protection in this scenario was perceived as an integral aspect of the cultivation process. The idea was that the entire production process would be organised specifically to allow for environmental benign modes of crop-protection, in relation to other production aspects (such as crop rotation and the combined cultivation of various crops). In addition, changes in agricultural education and research, and in the policy on admission of pesticides were envisioned (Groeneweegen et al. 1996). The latter scenario implied a radical break with the 'chemical control paradigm' that characterised the current agricultural practice as well as the MJP-G. In contrast to the latter, the Gideon project questioned the current agricultural production system and at the same time provided an alternative vision.

In order to meet the criticism of the advisory board, the general ideas concerning the system-oriented prevention scenario on crop-protection were elaborated in detailed case studies. These served to illustrate the practical implications of the somewhat abstract results of the Gideon project. In total, four cases studies were carried out by CLM, regarding the prevention of diseases, plagues and weeds in arable farming, in vegetable cultivation under glass, in the apple and pear cultivation and in flower bulb production. The case studies provided a quantitative backing to the project's findings.

The case studies were considered a very relevant supplement to the project's analysis, both by members of the advisory board and of the project team. The four case studies supplied detailed information on the level of practice of the implications of the suggested changes. According to my information, this kind of specificity about the consequences of a non-chemical control approach to crop-protection on farm level until then had not been readily available. Hence, the case studies are viewed, according to some informants to this study of the Gideon case, as a major result of the project.

The outcome was published in the form of a final report. The four case studies were included in this report as annexes. On the basis of this report and in close consultation with the advisory board, the Rathenau Institute drew up a Report to Parliament (Ster-
Dissemination of the project's findings

The Rathenau Institute shared the project team's analysis that the crop-protection problem in Dutch agriculture was trapped in a deadlock situation. A change "from within" was not to be expected. According to the Institute, policymakers therefore could play an important role in stimulating change. As a consequence, the dissemination efforts were almost entirely directed at Parliament. Yet, parliamentarians were not invited to participate in the Gideon project themselves.

Previous experience had taught the Institute that Members of Parliament "do not sit on advisory boards or take part in projects. You may invite them but they will never show up, with the exception of the occasional final symposium" (Sterrenberg, personal communication, February 11, 1999). The Institute assumed that also in the case of the Gideon project, Members of Parliament would not be interested in active participation. The Institute's assessment was that the Members do not wish to commit themselves in advance to a project of which the outcome is unsure. The lack of direct parliamentary involvement was sought to be compensated through a carefully pondered strategy to communicate the Gideon project's results.

The Institute's project supervisors consulted the advisory board members about the kind of product that might incite Members of Parliament as much as possible to take the project's findings seriously. To ensure the report's credibility, the Institute also discussed the project's findings with Members of Parliament and civil servants.

The Institute struggled to find middle ground between the advisory board's views and the project team's position. While the board opted for a matter-of-fact presentation of the main findings (one of the board members even held the view that the results had best be phrased in terms of concrete Parliamentarian resolutions), the project team emphasised the importance of presenting information on the project's method and on the 'evolution' of its outcome during the various stages of the project. In that way, the reader would be enabled to learn "vicariously" along the same lines as the participants to the Gideon project had done about alternatives to the current modes of crop-protection. Furthermore, they would have to be informed about the project's context and thus come to see the intricate relation between the project's findings and the 'real world'.

17 It is the Rathenau Institute's standard policy to draw up a report to Parliament on the basis of the findings of the projects that it commissions, in which it presents the Institute's own conclusions. These may to some extent deviate from those in the underlying project.

14 In response to my questions into the matter, one Member of Parliament posited that she would gladly have participated yet that to her regret, she had not been invited.
The Rathenau Institute shared with the advisory board the fear that the lack of analytic detail and the thrust of the findings as ‘future visions’ would not be convincing to Parliament. In order to deal with this criticism, the Institute in its concrete policy advice distanced itself somewhat from the Gideon project’s analysis and findings. The way in which the report to Parliament was phrased eventually was motivated by the wish to do justice to the project and its findings and at the same time to present the information as concise and concrete as possible. In addition, care was taken to ‘translate’ politically unfavourable phrases (such as “subsidies”) into more politically correct ones (“fiscal measures”), and to leave out politically non-viable suggestions (such as placing ecologically produced food products in a low VAT rate). Furthermore, a major change vis-à-vis the final report was that the two scenarios were depicted as subsequent phases, with the ‘chemical refinement’ scenario as an interim stage towards a situation of system wide prevention of diseases and plagues. A parallel was drawn with the shift in environmental policy from the initial end-of-pipe approach towards an integrated approach to environmental management. In the Special Issue of the Rathenau Institute’s newsletter, that was published somewhat later, this idea of subsequent phases was elaborated more emphatically.

The contents of the Report to Parliament on the Gideon project were presented by the Rathenau Institute’s project supervisor at a public hearing on request of the Standing Committee on Agriculture. She was one of five speakers in a session that was entirely devoted to discussing the MJP-G. Other speakers were representatives of the water authorities, of the Foundation for Nature and Environment (a major environmental organisation in the Netherlands), LTO-Nederland, and the NEFYTO branch-organisation of pesticides producers respectively. Of these, two had been personally involved in the Gideon project.

The Special Issue of the Newsletter intended to remind Members of Parliament of the Gideon project, and provided them with an even more concise presentation of its findings. In addition, it was meant to reach a wider audience. By the time of the presentation of the report to Parliament, a press *communiqué* was released, and sent to about a hundred potentially interested organisations (newspapers, radio and TV program managers, *et cetera*). This led to some modest media coverage. In total, on the basis of the information collected by the Rathenau Institute’s documentation department, about six articles were published in the general media on the project at the time of its finalisation. In addition, as a follow-on project, the Rathenau Institute invited the methodo-
logical expert on the Gideon project team to write on the experiences with employing the ITA method. This resulted in a "methodical guide" that was published by the Rathenau Institute (Grin et al 1997).

<table>
<thead>
<tr>
<th>activity</th>
<th>explanation</th>
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<tbody>
<tr>
<td>Exploratory study</td>
<td>Initial exploration of the problem area; formulation of an initial research problem in commission of the later TA-commissioning institute.</td>
</tr>
<tr>
<td>Drafting of a project plan, formation of a project team</td>
<td>Elaboration of the research problem and objectives into a plan for conducting an Interactive Technology Assessment (ITA). Formation of the project team. On-going debate among those involved results in a reformulation of the project's intentions and objectives.</td>
</tr>
<tr>
<td>Team building and training</td>
<td>Intensive contacts and meetings between the members (7) of the project team in order to get to know one another and to gain a common understanding of the project's methodology and intentions. Junior staff members are trained in suitable interview techniques.</td>
</tr>
<tr>
<td>Conducting preliminary research; Identifying initial discussion partner(s)</td>
<td>First round of interviewing. Gaining insight in the interviewees' definitions of 'sustainable' crop-protection, perceptions of barriers and options for eliminating these on both a short term and a long term (2030) perspective. Overview of the positions of the relevant discussion partners and their mutual relations.</td>
</tr>
<tr>
<td>Integration of preliminary findings.</td>
<td>The project team drafts options for sustainable crop-protection.</td>
</tr>
<tr>
<td>Checking the project team's (&quot;etic&quot;) view. Identifying additional discussion partners</td>
<td>Second round of (telephone) interviews, resulting in an adjustment of the options as formulate by the project team. Continued cross-selection through snow-balling method.</td>
</tr>
<tr>
<td>Presentation of preliminary research findings</td>
<td>Preparation of an overview of the state of affairs in five sub-areas of crop-protection (technology, farming operations, production chains, environmental assessment, and existing policy).</td>
</tr>
<tr>
<td>Organisation of the first &quot;interactive session&quot;</td>
<td>Future-oriented workshop. With the aid of a creativity enhancing technique participants were invited to discuss potential and desirable long-term developments in crop-protection practices.</td>
</tr>
<tr>
<td>Integration of the research findings</td>
<td>The project team integrates the results from the workshop and interviewing rounds into coherent visions of the future and strategies comprising specific steps to be taken on the short and mid term in order to realise the long term visions.</td>
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<tr>
<td>Organisation of the second &quot;interactive session&quot;</td>
<td>Working conference. Participants provide comments on the formulated visions and strategies and provide additional input.</td>
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**Box 6.2. Schematic overview of the ITA method as employed in the Gideon project 1995 - 1997**

| **Integration of the research findings** | The project team integrates the findings into (two) scenarios for a more sustainable crop-protection practice in the Netherlands. |
| **Preparation of the final report** | Members of the project team prepare a final report. |
| **Presentation of the concept report. Attracting media attention** | “Open day.” The concept version of the report is presented to a wide variety of interested parties, that are invited to comment on the findings. Initiatives to draw media attention to the project and the issue under scrutiny. |
| **Drafting of the final report** | Members of the project team and the commissioning institute draft the final report in close consultation with the project’s advisory board. |
| **Drafting of the Report to Parliament.** | Members of the commissioning institute compose a report to inform Parliament about the project’s findings. |
| **Presentation of the project’s findings to its main addressee** | Oral presentation of the project’s findings to the parliamentarian Committee on Agriculture |

**A review of the crop-protection policy: knowledge creep rather than impact**

In addition to the Rathenau Institute, other actors too seized the mid-term evaluation of the MJP-G as an opportunity to come forward with their inputs for adjusting and amending the existing crop-protection policy. As these were complementary to the official evaluations that were ordered by the CUO, the commission that co-ordinated and supervised the MJP-G’s Implementation Agreement (Commissie van Deskundigen Emissie-evaluatie MJP-G 1996a,b; Rijnconsult 1996), preceding the discussions, Members of Parliament were provided with a considerable amount of information on the Plan.⁴

In a letter with which he presented the various evaluation studies to the body of representatives, the Minister of Agriculture singled out the Gideon project. “Many organisations have voiced their views on the subject of crop-protection,” the Minister wrote,

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⁴A collaboration of seven environmental organisations (Vereniging Milieudefensie, Stichting Natuur en Milieu, Stichting Reinwater, Zuid-Hollands Milieufederatie, Milieufederatie Noord-Holland, Brabantse Milieufederatie en Milieufederatie Drenthe) provided a report with comments and suggestions on the current policy, with which publication they launched a campaign dubbed “fed-up with poison” (Muilerman & Steekelenburg 1996). The CLM, the research institute that participated as a project team member in the Gideon project, also issued its own report (Reus & Pak 1996). The report intended to “bring clarity” in the various findings from the multitude of evaluation studies that were issued at the time, and in the recommendations for the crop-protection policy beyond the year 2000. The CLM report notably underscored the need to focus on farmers in a reformulated policy and on means to stimulate them to innovate their practice from an environmental point of view. Likewise, the CUO itself formulated recommendations for the next five year period of the MJP-G (CUO 1997) in a more elaborate document than its usual annual progress reports. Among the recommendations was the suggestion to install a ‘discussion group’ that could identify the dilemmas is the then-current crop-protection policy and that could investigate possible solutions in view of a post-2000 policy on the issue.
which led to a discussion that he considered beyond the scope of his letter. However, he continued, he wished to make an exception for the Gideon project’s report to Parliament, in which the notion of a sustainable crop-protection “is based on preventing as much as possible the occurrence of diseases and plagues.” This approach, the Minister emphasised, had his whole hearted approval “and is reflected in the MJP-G under the heading of ‘reduction of the structural dependency’” (Tweede Kamer, 1996-1997, 21 677 nr. 33:2).

The Minister’s reference to Gideon was not the first time that the project was mentioned in Parliament. Preceding the evaluation of the MJP-G, in a discussion on the changes in the Crop Protection Act, a member of the major confessional party (CDA) quoted the draft version of the final report on the topic of “small scale cultivations” and asked the Minister to take into consideration the recommendation, made in the report, to install a fund to financially support the admission of agents for small scale cultivations (Tweede Kamer, 1996-1997, 24 817, no. 4:3). Such a fund could help guarantee, it was argued, the availability of agents that have only a limited applicability (such as in fruit production), and that are therefore relatively uninteresting for a producer to develop and market. In the eyes of the Gideon project participants (and according to the member of the advisory board who is believed by some to have deliberately “plugged it in” in the project), the measure might stimulate the development of “alternative”, i.e., environmentally sound protection agents. In reaction to this request, the Minister agreed to contribute to such a fund a (relatively small, one-off) sum of money.

A third occasion on which the Gideon project was explicitly mentioned was during the debate in Parliament on the crop-protection policy, which began in January 1997. A member of a smaller right wing confessional party (SGP) requested the Minister to comment on the Rathenau Institute’s report (Tweede Kamer, 1996-1997, 21 677, nr. 41:9). The Minister did not do so, however, in the first or in the second stage of the deliberations.

A general lack of impact?

In general, the parliamentary discussions on the evaluation of the MJP-G did not reflect the thrust of the Gideon project’s findings. Discussions focused mainly on the extent to which the MJP-G objectives were met, and whether or not additional efforts were necessary. The policy as such, and the chemical control paradigm on the premises of which it had been formulated, were not put up for discussion. The overall effect of the discussions was that the Minister of Agriculture proposed additional measures in order to realise the objectives of the MJP-G during its second stage. The measures were drawn up in collaboration with the farmer representative organisation LTO and focused
mainly on increasing the chances to meet the reduction targets as set in the MJP-G by the year 2000.15

Apparently, neither the three brief references to the Gideon project or the dissemination activities of the Ratheinau Institute had had the impact on the parliamentarian debate on crop-protection and the MJP-G that the Institute and the Gideon project team had intended. Close scrutiny of the case material reveals, furthermore, that the first occasion on which the project was mentioned in Parliament (with respect to installing the fund to enable the development and admission of new crop-protection agents) cannot be regarded as an indication of the project's success in putting up for discussion the current practice of crop-protection. On the contrary, reference to the Gideon project was a politically opportune ploy to ask attention for a policy measure that in effect might be counterproductive to the project's intentions.

In the Gideon project, the availability of a fund to stimulate the development of protection agents that have a small scale application was considered favourable for the development and admission of ecologically sound agents. As such, it was presented in the final report to fit the scenario of system-oriented prevention. The environmental argument, however, was 'added' to a plea for installing such a fund, which dated from way before the Gideon project. The fund might help to keep available a wide range of agents in the face of stringent policy measures on admitting crop-protection agents. A number of parties among which LTO-Nederland and the pesticides producers' branch organisation NEFYTO dreaded a situation in which, in the case of calamities, no suitable chemical(631,625),(959,917)

15 The measures included 1) installation of a system for registration of pesticide use on the level of the individual farm; 2) efforts to provoke a change in the practice of in potato cultivation from chemical to mechanical haulm killing; 3) efforts to reduce herbicide use in corn cultivation by implementation of technical measures; 4) setting up field experiments to assess the standards for emission reduction with respect to water quality objectives; and 5) establishing a fund for financially supporting the admission procedures of crop-protection agents which can be applied in so-called 'small scale cultivations' only (Tweede Kamer, 1996-1997, 21 677, nr. 34:2).
matter indefinitely. The Gideon project’s report served as a window of opportunity for safely bringing the fund to the Minister's attention publicly, with the desired effect.

The instance is an example of the ‘political impact’ of the project and its resulting reports, even though here, the impact was contradictory to the project’s intentions. In this light, also the Minister’s reference to the project in his letter of recommendation to Parliament may be viewed. In quoting the Gideon project, the Minister specified the MJP-G objective of “reducing the dependence” on chemical pesticides in the project’s terms of “preventing plagues and diseases”. It was the first time in the formal political debate, judging from documents, that the MJP-G objective was concretised in this way. As such, it was a political statement, intended to narrow down the once deliberately vaguely formulised objectives, to the exclusion of other interpretations of the MJP-G policy’s intentions. This assumption is supported by the fact that in later documents, such as in the MJP-G’s ‘sequel’ (see below), the Ministry phrased the objective of the reduction of dependence explicitly in terms of prevention of plagues and diseases.

The Minister’s reference to the Gideon report was evidence of a victory in a less visible political ‘battle’ that was fought behind the scenes at the Ministry of Agriculture. The project came to play a (small) role in the power plays between the progressive and far-sighted civil servants, who favoured a systems-oriented approach to innovation in the agricultural sector and their more conservative colleagues, who emphasised a defence of interests of the individual farmer. To the former, the Gideon project offered an opportunity to legitimise their points of view as they could now point out that obviously they “were not the only ones who think this [approach] is necessary and feasible” (Van der Gaag, personal communication, December 1, 1998). It was from this perspective that the protagonists of the Gideon project at the Ministry of Agriculture made sure that the project’s findings landed on the Minister’s desk.6

Thus, the Gideon project arguably did affect the policy formation process, be it in a different way than it had intended to do via the parliamentarian discussions. It had an impact not because it offered specific new information, but because of the way in which the information was compiled and processed. Because the findings were endorsed by a wide variety of actors, (the participants in the project) the report had a legitimising role for existing political preferences that were in line with its findings.

6 It was from this perspective, too, that the protagonists of the Gideon project at the Ministry of Agriculture who sat on the project’s advisory board so strongly criticised the project’s findings. While the project initially had promised to be instrumental in getting their points of view across, in the course of time, it appeared to follow its own path and seemed not to result in the envisaged support for their arguments. For instance, one of the project’s relative new insights was to consider the individual farmer as a “point of leverage” in any policy for innovating the agricultural sector. The idea came to the fore, according to one of the participants, notably as a result of the approach to involve people from the shop floor in the Gideon project, and appeared “very promising”. The idea however did not coincide with the usual line of thinking about agricultural innovations at the Ministry of Agriculture as well as among the representative organisations, and was, moreover, at odds with the concept of prevention of diseases at a systems level which was strongly propagated by some of the advisory board’s members. Eventually, the idea was mentioned merely casually in the final report (Groenewegen et al., 1996:43) and was not reflected in the Report to Parliament.
This being said, close scrutiny of policy documents as well as remarks from former Gideon participants give witness of processes of learning which suggest that not merely previous ideas were being reinforced, but that also new insights crept into the drafting of the MJP-G’s follow-up policy.

The occurrence of learning

In addition to farmers and growers, retailers and pesticide producers, analysts from various research institutes were involved in the Gideon project. These were the same people that came to be involved in the preparation of policy plans to follow the MJP-G. It is through them, that processes of learning that may have contributed to a reformulation of the crop-protection policy can be traced.

One of the Gideon participants was employed by the IKC-L (the information centre that had come to replace the agricultural extension and knowledge dissemination structure). The centre was closely involved in a final evaluation of the MJP-G as well as in the preparations of the MJP-G’s follow-up, which addressed the period following 2000. Under its auspices, the first preparatory study was drafted (commissioned by the Ministry of Agriculture) as an input to the “Exploration of a policy on crop-protection after 2000” discussion paper (LNV 1999a) that was the first official document to address the post-MJP-G period (which at the time was commonly referred to as the Plan Faber, after the State Secretary of Agriculture in the 1998-2002 cabinet). The IKC-L’s study (1998) listed the then-current problems in the field of crop-protection and discussed the feasibility of a wide range of policy options among those, which were put forward in the Gideon project. In the reference list, the Gideon report is mentioned as a source.

The author of the IKC-report who participated in the Gideon project emphasised that the project had a distinct role in making visible the support for a major shift in the crop-protection policy (Van Esch, personal communication, May 3, 1999). The most significant change in the post-2000 policy plans on the issue in comparison to the MJP-G is the shift away from the ‘yes-provided that’ basis (application of a crop-protection agent is allowed provided that the specific substance is not banned) to a the

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17 In fact, 22 out of the 102 people listed as participant in the Gideon project were affiliated with research institutes that traditionally consider the central government as their first and foremost client (not counting the researchers affiliated with universities).

18 To be precise, other participants who were not affiliated with policy advising research institutes also gave evidence of processes of learning that, according to their assessment, were incited by the Gideon project. The assessment of the Gideon project’s influence on his understanding of the crop-protection issue by the representative of a large retailer holding that participated may serve as an example: "My attitude at that time [of the beginning of the project] towards crop-protection was different; more distant. My attitude was merely one of ‘I protect our suppliers’. Now I am much more involved in developments in crop-protection, adopting a more hands-on role. ... The Gideon project contributed to my understanding of crop-protection. The input of the participants was very varied and thus provided an interesting view on what was going on in that field. ... When someone remarked ‘about 15 years ago, we were not in need of pesticides either in the quantities that we are using today’, that was an eye-opener to me" (personal communication).
'no-unless' principle that was characteristic of Dutch environmental policy plans. This shift was also announced in the ministerial position paper that stated the perspective of the Ministry of Agriculture on future policy plans (LNV 1999b). Not the insight itself was new, but the notion that there was sufficient support to adopt such an insight in the area of crop-protection. "Unlike the instrumental elaboration, which is rather weak, the two scenarios that were drafted in the Gideon project are often referred to in this respect," according to the IKC spokesman.

Another Gideon participant who was closely involved in the preparations of the MJP-G's sequel made a similar observation. The RIZA researcher that took part in the project replied in the affirmative on the question whether Gideon offered 'anything new': "Absolutely, to many people it did. Not to those who already had given much thought to the subject, yet for them the novelty was that various ideas were now listed in a systematic manner. The most important observation to which this resulted was that the two lines of thinking – chemical refinement and system oriented prevention – turned out not to be in conflict with one another but, on the contrary, were in line and level with each other. The strongest impact hence was in terms of increasing awareness [about the issue]. It helped people to start thinking; at least it helped me to reflect [on what is a sensible approach to dealing with the issue]" (Faassen, personal communication, April 23, 1999).19

Another important party that was closely involved in both the Gideon project and the crop-protection policy developments in general was the CLM research bureau. CLM actively propagated the adoption of the Gideon project's main findings. As appears from the minutes of the parliamentarian discussion on the MJP-G's yearly evaluation report of 1997, CLM had suggested to interpret the concept of an 'effective composition of crop-protection agents' that was commonly used in the crop-protection debate, in terms of either "chemical refinement" or "system oriented prevention"; a suggestion that found a willing ear among some of the discussants (Tweede Kamer 1998-1999, 21 6777, no. 49:3)."20

CLM had a distinct role in the preparations of the post-MJP-G crop-protection policy. It had been asked to join the Gideon project team for its expertise on agrarian affairs. For similar reasons, in 1999, it was commissioned to conduct a so-called Field

19 Interestingly, the insights generated and/or bundled within the Gideon context also found their way to another policy area via this participant. He referred to the project and the two scenarios that resulted from it in a publication that was commissioned by the Council for Environmental and Nature Research (Faassen 1998:87-88) on spatial planning from a sustainable perspective, stating that the project offered a first attempt to formulate a long-term vision on the future of the agrarian sector that very well might have consequences for the way the scarce space in the Netherlands is used.

20 In later years, CLM became more modest in its expectations concerning the feasibility of the latter scenario: "Significant in the [mid-term MJP-G evaluation] period was the Gideon-project of the Rathenau Institute.... This study sketched two routes towards sustainability: chemical refinement and system oriented prevention. Parties in the agricultural sector as well as environmental organisations all considered the latter as standing a good chance in bringing about sustainability. At this moment [2002] however that seems a bridge too far (...) the 'technical' route of chemical refinement is now standing practice" (Leendertse et al., 2002; my translation).
Test (Praktijkproef) by which the Ministry of Agriculture intended to gain experience with the implementation of the main policy measure envisioned in a future policy: ‘certification’ of the means for crop-protection. Certification entails the procedure that a farmer has to adopt when using crop-protection agents; it ensures that his pesticide use complies with a number of directives that the government sets and that are independently monitored and controlled.

CLM developed ‘certification schemes’ in close consultation with farmers, farmer organisations and the pesticide industry, and requested farmers to assess their feasibility in practice. The results of the test were positive, confirming the desirability and feasibility of yet another major shift in the crop-protection policy in comparison to the MJP-G-period. As had been concluded in the Gideon project as well, it turned out that there was support for the notion of voluntary certification and for the principle of addressing the individual farmer (rather than the sector’s representative bodies) in any effort to implement a crop-protection policy, and of holding him/her personally accountable for (lack of) goal achievement.

Thus, gradually, the road was cleared for a drastically reformulated crop-protection policy for the years 2001-2010. The Ministry of Agriculture adopted a carefully designed strategy of iterative discussion, consultation and advise, involving a large number of parties in the sector when drafting the post-MJP-G policy document that was, according to its title, to provide an ‘outlook on a healthy cultivation practice’.

The main features of this policy (LN V VROM 2000) were the principle of ‘certification’ and the focus on ‘integrated cultivation’. The latter entailed an approach to controlling plagues and crop diseases through a balance of chemical and non-chemical control measures. A focus on preventing plagues and diseases, with the possibility of employing chemical agents as a last resort formed the basic philosophy underlying these policy measures, backed up by a consistent elaboration of the ‘no-unless’ principle. Furthermore, in contrast to the MJP-G period, the focus was on stimulating communication between government, the individual farmer or grower and society at large.

In spite of the Rathenau Institute’s efforts, the Gideon project’s influence on the parliamentary discussion at the time of the mid-term evaluation of the MJP-G was virtually none. Still, the project did have some impact, in two ways. Firstly, it induced processes of learning among of its participants. Secondly, it affected the power games that were being played in the agricultural network concerning the crop-protection issue. Furthermore, it offered a new perspective on the role of farmers in processes of change, which differed from the traditional view (endorsed by the ‘iron triangle’). The project underscored the potential and the willingness for change among individual farmers that gave witness of much more room for manoeuvring, politically, than the farmers’ representative organisations’ depiction of the situation.
In order to mitigate environmental problems associated with agricultural pest control, any individual agricultural entrepreneur is to make his/her use of crop-protection agents transparent by means of meeting the criteria of certification on farm level with respect to 'integrated cultivation,' i.e., an optimum balance between farm economic considerations, phytopathological considerations, and notions pertaining to quality of produce, labour safety, and the environment.

The objective of policy measures with respect to plant disease control is the employment of methods and techniques to protect the crops' health; chemical methods are used if all else fails. By 2005, 90% of the Dutch farms will be certified.

Environmental problems resulting from crop-protection practices are caused by a lack of incentives for the individual farmer to employ methods and non-chemical control techniques to prevent diseases and plagues and to protect the crops' health.

The main objective of any crop-protection policy is to prevent the occurrence of plagues and plant diseases.

Pollution should be abated at its source. Pollution as a result of crop-protection practices is dealt with on the basis of the 'no - unless' principle (no substance may be applied unless a licence for the action is granted). Crop protection problems are to be dealt with by the entire chain of agricultural production, that is by farmers and growers, supplying industries, distribution, and retail companies. The individual agricultural entrepreneur is the main sparring partner to discuss policy measure with, and to come to an agreement between partners in the agricultural production chain and society at large.

A review of current crop-protection practices contributes to an improvement of public health, of the economic viability of the agricultural sector, of the competition position of Dutch produce on the export market, and of the environment, notably to water quality (among other things to ensure proper drinking water) and biodiversity.

Box 6.3. The governmental policy theory on crop-protection by 2000, as expressed by the Ministry of Agriculture and others (based on LNV VROM 2000)

In order to assess the plausibility that this subtle impact contributed in any way to the changes in the crop-protection policy that is observed, a careful consideration of other dynamics in the field at that time is imperative. Such a broadening of the picture gives us a better informed basis for considering the question why a carefully pondered methodical and strategic approach to generating knowledge on 'what to do' as had been designed in the Gideon case sorted the (modest) effect it did.

Dynamics in the project's context

As may be obvious, the dynamics in the field of crop-protection over the past two decades were intense. It is therefore remarkable that over the years, the general public's attitude towards the scientific and technological progress with regard to crop-protection was acquiescent. In contrast, for instance, the issue of genetic modification and its potential health and environmental risks did stir public concern to quite some extent.
Furthermore, there was a distinct trend in consumers' behaviour towards more 'natural' and 'honest' (food) products, perhaps as a symptom of a fin de siècle atmosphere. Pollution scandals and the outbreaks of animal diseases (among them BSE) raised public awareness of potential dangers of modern agricultural production methods. In the later years of the 20th century, the willingness to buy organic products increased to such an extent that major super markets made these a permanent item in their product range. In line with this development, the awareness of environmental hallmarks and the intentions these propagate gradually increased as well.

The developments in the consumer market definitely became a major stimulant towards a sustainable crop-protection. Farmers were keen to pick up on these signals. Inspired by market developments as well as the MJP-G objectives, farmers and regional divisions of the LTO-organisation throughout the country initiated projects to experiment with ecologically sound crop-protection techniques. By the time the MJP-G was drafted, 50% of all Dutch tomatoes for instance were grown under the conditions of so-called 'environmentally conscious cultivation practice' (Milieubewuste teelt, MBT). The Ministry of Agriculture even viewed these developments initially with some regret and discouraged the emphasising of the environmentally sound production process for fear it might leave the regularly grown crops with an image of being 'unhealthy' or dangerous.

Still, pressure to critically review the use of crop-protection agents and their admission policy did not result from the public at large but mainly from such distinct actor groups as the water research and water management institutes, and experts on phytopathology. As described above, some actors within the Ministry of Agriculture picked up on these signals, among whom the Minister in the 1994 to 1998 cabinet, Van Aartsen. In his main strategic paper (LNV 1994), 'sustainable agriculture' (understood as a search towards an optimal balance between economy and ecology) is considered a central element in the Ministry's agricultural policy. Van Aartsen was in particular in favour of 'biological' (ecological) crop cultivation (cf. LNV 1996).

However, because of the many hardships that hit the agricultural sector in the mid 1990s (BSE, pigs plague, strongly increasing incidents of phytophthora (potato disease) outbreaks) and the considerable opposition from within the agricultural sector against the manure (mineral) volume registration, it is commonly assumed that the Ministry of Agriculture deliberately "went easy" on the topic of pesticides (Van Esch, personal communication, May 3, 1999). Rather than to an appeasement of the sector, this led to considerable annoyance among farmers and environmental organisations alike. As a consequence of the conflicting motives in policy formulation and implementation, the government sailed a rather inconsistent course with respect to the admission of crop-protection agents in these years. Within a time-span of about 8 years, several environ-
mentally harmful yet "indispensable" pest control agents have been "banned, quasi officially tolerated, officially admitted, and banned again" (Leendertse et al. 2002).

These national policy dynamics took place against the backdrop of on-going EU-debates on the regulation of crop-protection, which was to amount in a ban for several widely used substances in the year 2000. According to many, these developments were given too little attention in the governmental campaign to inform farmers about the MJP-G intentions (by the ‘Core Group MJP-G’ which was, from 1998, onward coordinated by LTO-Nederland). The international developments however did reinforce the need to finally come up with a consistent admission policy (Commissie Ginjaar 1999).

Against this background, the activities to formulate a new national crop-protection policy for the 2001-2010 period were outlined. Upon the drafting of the aforementioned Discussion Paper on “crop-protection after 2000” (to which the IKC-L contributed a first input), a series of national consultation rounds was instigated. Preliminary conclusions were iteratively put up for discussion with relevant parties from the agricultural sector; a debate that was nourished with the results from both the Field Test (Praktijkproef) and from scenario studies that elaborated the business economic and environmental consequences of the envisioned policy (conducted by LEI and RIVM). It was on this basis that eventually the suggestions for an MJP-G sequel were integrated into the final White Paper (LNV VROM 2000, see above) that was discussed in Parliament.

**Gideon and the crop-protection policy problem: an assessment’s assessment**

Anyone involved with the Gideon initiative in hindsight comments that it was definitely an outstanding project. It differed from any other project in the crop-protection area in its approach, scope and objectives. The way in which the project’s specific characteristics are appreciated varies largely. On one thing, however, the discussion partners in this case study agree almost unanimously: its impact was little to none. For the above reasons, I disagree with this assessment. However subtle, some effects can be traced, both in terms of learning and of political impact. Yet, indeed, in terms of goal achievement in view of the objectives that project had set out for itself (influencing crop-protection policy through influencing parliamentarian debate), it was little successful.

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41 In addition to the developments in the EU admission policy, in the early 1990s, the European Commission started a project on the initiative of the Netherlands to investigate the possibilities to instigate a sustainable crop-protection practice.
Unfulfilled expectations

Most of the informants for this case study hold corresponding views as to why the Gideon project did not sort the effect it intended to have. First of all, in the eyes of many of those involved, the project did “not provide any news”. As a result, it had little surplus value for the parliamentarian discussion. Moreover, the way in which the crop-protection problem was perceived and elaborated in the Gideon project deviated largely from the way it was defined in the then-current political debate, which contributed to the relative disinterestedness on the part of parliamentarians for the study. A second line of argument to explain the project’s lack of success concerns the relative weak position of the Rathenau Institute in the crop-protection debate. As mentioned, the Institute was not considered a major player in the field and therefore was found to have little authority in commenting on the subject.

A close scrutiny of the case material yet reveals that apart from these straightforward explanations, more complex and subtle aspects of both the issue at stake and of the inquiry process contributed to Gideon’s lack of success.

Particularities of the issue at stake

The particular characteristics of the crop-protection issue in fact rendered it an unlikely candidate for a successful parliamentary TA with intentions as far-reaching as the Gideon project’s. First of all, an evaluation of the MJP-G such as was planned mid term is not discussed ‘in Parliament’ as such but is generally covered by the experts from the Standing Committee on Agriculture instead. As mentioned before, members of this committee are not known for their innovative approach to dealing with agriculture as a policy problem. On the basis of the perceived interests of the electorate they represent, the problem definition as featured in the Gideon project to the parliamentarian experts did not seem meaningful. In general, in any debate on the issue, they preferred to steer clear from the question (implicitly voiced in the Gideon project) of how much room there is at all for agriculture in the Netherlands in the future.

A complicating aspect in agricultural representation is that ‘the’ agricultural sector in fact is highly divers in many ways. The willingness to consider and adopt innovative ideas varies regionally as well as per cultivation type. Closed horticulture in general is the most innovative and far-sighted sector, as is the western region of the Netherlands (where of old closed horticulture is well represented). Furthermore, the extent of change-readiness differs per product. Relevant factors are the relative novelty of the product (the more a cultivation practice is culturally embedded, the more difficult innovation is realised), the way in which the producer - consumer process is institutionally given shape (the shorter and better organised, the sooner changing views are made operational), and the extent to which cultivation conditions may vary (difficult control-
lable conditions allow for little flexibility). Moreover, the 'individuality' of a product matters. As one grower explained to me why he used environmentally sound production methods for his flower cultivation but not for his paprika: "Whether my peppers look good or not does not make much difference. They are all piled up together in one big heap at the auction and no one will know they're mine. But when I take my flowers to the market, nicely done in little baskets, people will say 'look, those are pansies from the Jones'."44 The heterogeneity and the relatively autonomous basis on which farmers and growers operate render representation a complex matter and cause the representatives in Parliament and in farmer organisations to be "as progressive as the most change-resistant, backward farmer they represent" (Faassen, personal communication, April 23, 1999).

Seen in this light, the Gideon project team's choice to focus on people from the farm's floor, so to speak, was a sensible one. Innovative power, anyone in the sector agrees, lies with the individual farmer. Seen in the light of the project's intentions to overcome the crop-protection issue's 'deadlock situation' in cognitive terms, the choice made sense. In political terms, however, the project team almost inevitably forfeited its credibility.

The 40-some years tradition of governing the agricultural sector in close consultation between the Ministry, the parliamentarian Standing Committee and the Agricultural Board was not easily brushed aside in favour of a more direct involvement of individual farmers (in spite of the Board's putting aside its representation tasks). In the case of the crop-protection issue, this was even more trying, because of its highly expertise-laden character. The technical understanding of the issue is closely intertwined with the political understanding of crop-protection. Because such a highly sensitive issue for years did not stir much public attention, the political domain where the issue is debated does not include any non-expert actors with a serious power base (such as for instance a major consumers' organisation). Because the Gideon project's results were generated and elaborated on 'shop floor' level, they were frowned upon by the Ministry of Agriculture as well as by the farmer representative organisations.

This lack of goodwill for the Gideon project may have been reinforced by the fact that, in contrast to many other topics on which the Rathenau Institute commented, the crop-protection issue already knew plenty opportunity for consultation and deliberation. The Institute's position this time was not one of providing a well-needed opportunity for interaction, as had been the case with its other projects. To the actors in the agricultural network, the Gideon project provided "an extra opportunity to discuss the matter" (Ottenheim, personal communication, December 1, 1999). Yet, participation was considered useful not for substantive reasons but for strategic reasons. As said a member of the advisory board: "One does not want to miss out on such an occasion for

44 The name used here is an alias.
of the advisory board: "One does not want to miss out on such an occasion for putting forward one's point of view."

The analysts' role in relation to the institutional setting

Considering the knowledge utilisation literature, the modest impact of the Gideon project on the parliamentarian debate is hardly surprising. Empirical research in the field of knowledge utilisation (see for instance Weiss 1977, 1980) showed that new information is rarely used instrumentally, itself inducing an actor to change his/her views on a topic. Information in political decision making is often used in a conceptual way, adding to an on-going process of knowledge accumulation which in due time could result in a revision of previously held views.

In the case of the Gideon project, the situation was, however, more complicated. The project was intended to put up for discussion the very conceptual and institutional framework by which the crop-protection issue is usually dealt with. In so doing, the Rathenau Institute almost by definition did not qualify as a regular discussion partner. Its information on the crop-protection, therefore, did not 'add' self-evidently to the existing body of knowledge.

The ITA approach that was adopted in the Gideon project estranged the recipients of its findings even more. For someone who is trained and well-seasoned in the neopositivist paradigm and/or unfamiliar with a constructivist approach to inquiry, the adopted approach made little sense. The rationale underlying the project's methodical choices was, however, sparsely illuminated.

The commissioning Rathenau Institute did try to explicate the adopted methodical approach to the advisory board time and again. As the Institute's project leader explains: "The thing is, with an interactive process, you don't get a grip on what's going on. Most specifically, you cannot predict the outcome. That was the hardest for the advisory board to put up with. The board was anxious to co-determine the outcome of the process and did not seem to understand that that desire is at odds with the intentions of an ITA process" (Sterrenberg, personal communication, February 11, 1999).

The Rathenau Institute itself too was rather apprehensive of the adopted approach. The decision to adopt the ITA approach was motivated by methodological considerations. Furthermore, it seemed to suit the project's purpose. In practice yet, it took the Institute quite some getting used to. "At first, I was not fully aware myself of the consequences [regarding the extent to which one can control the process]. It was a conscious yet difficult choice. After all, as a Rathenau Institute, one seeks to posit one's own view, especially in the direction of Parliament. As the process was unrolling, one could see that one is not going to get there. There was a certain tension between what we eventually meant to get out of the analysis, and the inquiry process itself."
Two aspects aggravated this tension. First of all, the Rathenau Institute in general does not opt for a mere mediating role between the policy actor and stakeholders, as it does not consider a broker role a useful contribution to public debate. Therefore, also in this case, it intended to contribute to the discussion on crop-protection in Parliament by formulating its own view on the basis of a synthesis (not consensus) of various perspectives on the issue.

Secondly, the misunderstanding between the advisory board and the project team left the Institute in a trying situation. The Institute was well aware of its relatively weak position in the agricultural network, at least with regard to the crop-protection issues and was eager to establish a 'good name'. Furthermore, it did not wish to risk the reputation it had with the circle of civil servants and researchers that were, as members of the advisory board or otherwise, closely informed about the Gideon project's developments. The persons responsible for the project at the Rathenau Institute therefore concerned themselves actively with the issue. Alongside of the analytic process, the supervisors initiated discussions with actors from the crop-protection field, in order to stay informed about what went on and to check whether the project's findings were in keeping with the general attitude towards the issue. This resulted in a kind of parallel process of interaction and consultation that at times was on a tense footing with the project team's intentions. This came to the fore most clearly at the time of writing up the project's results. The bulk of the inchoate and chaotic findings were organised and interpreted along the lines of what made sense in the Institute's eyes.

**Particularities of the participatory process**

Because of the pressure that was exercised by the advisory board, in practice, the conscious separation between two levels of discussion in the Gideon project proved difficult to maintain. In order to avoid the specific complexities described above, the Rathenau Institute and the project team had designed the project as a two-tier process. By organising the advisory board as a platform where the players who generally dominated the crop-protection issue could have their say, it was hoped that the actual inquiry process might proceed in a relative 'lee', protected from the hardball power plays that characterise crop-protection policy discussions. In so doing, the project team hoped to create an "analytical space" that would yield creative and innovative ideas (Grin 1998).

In practice, the 'cross-fertilisation' between the two levels was considerable. This resulted, firstly, from the procedure to 'recruit' participants for the project. While they were selected on the basis of carefully formulated criteria, the farmers and growers were by and large affiliated with the formal representative organisations. In addition, the contents of the inquiry process was systematically influenced by the advisory board, not only as a result of the mediation between the two by the Rathenau Institute's staff members (as had been the intention all along), but also directly. The creative workshop
with the advisory board that was organised when the initial rounds of interviewing did not result in the expected suggestions for innovation provided a first occasion for such influence. A second occasion was at the final stage, when the board was closely involved in wrapping up the findings of the inquiry process.

The participants in the inquiry process as well as some of the project team members call the influence of the advisory board on the contents of the project's outcome and final results considerable. As one of them observed: "The people who were at the table [at the future-oriented workshop and the working conference, respectively] were probably a little surprised to find that certain elements had gone missing in the final results" (Groenewegen, personal communication, April 4, 1999). Interestingly, except for the project team members, neither the interviewed participants to the interactive sessions nor other informants (members of the advisory board) considered this a serious flaw. To most of the participants, attending the sessions was considered worthwhile.

**Dissemination of the project's findings**

Another intricacy that the Rathenau Institute was struggling with, in regard to the Gideon project and in general, was the question whether or not to actively "lobby" for the acceptance of its projects' findings. As explained by a spokesperson: "One would like to see one's results to be widely acknowledged. Yet, lobbying to ensure a positive receipt carries the risk that one becomes a player oneself. In the short term, it might win you success, yet in the long run one risks loosing one's independent position as a neutral party" (Sterrenberg, personal communication, February 11, 1999). In the case of the Gideon project, a rather active approach was adopted rather reluctantly to disseminating the results.

The Institute's staff disagreed with the project team's implicit view that if only the results were sufficiently constructive and novel, the political arena would embrace them more or less automatically. On the basis of its experience with their reporting to Parliament, the Institute chose to actively propagate the project's findings. The Report to Parliament, according to a civil servant, by most involved parliamentarians was nonchalantly leafed through and piled on the stack of evaluation studies as "yet another report on the issue." Yet, the public hearing session on the brink of the parliamentarian discussion of the MJP-G indeed was highly appreciated as a way of presenting the main findings in a clear and concise way.

One Member of Parliament spontaneously remarked (evaluating the project in hindsight) that the text probably would have won in convincing power if a description of the project's method and rationale had been included. In that way, she said, the information might have provided a clear picture of the findings' origins and background, and whether and in which way during the project's course of events people had come to change their views. This is exactly what some members of the project team had in-
tended to do. Mindful of Guba and Lincoln’s notion of ‘vicarious experience’, they had hoped to enable readers of the report to go through a similar learning experience as the project’s participants arguably had engaged in. To that end, the process itself needed extensive description, in addition to the substantive findings. In the deliberations about the dissemination of the project’s findings, the strategy to present the information as concise and matter-of-factly as possible was preferred over this view.

The ITA method to yield phronesis: a discussion

The Gideon project was methodologically very sophisticated. It intended to contribute to the potentiality of change in the Dutch practice of crop-protection by breaking in, so to speak, in the knowledge arena that dominated the field. To achieve this objective, the project was carefully designed to (i) operate as a newcomer in the arena, to (ii) include not the “old boys” that dominated that arena but rather to involve knowledgeable actors from “the shop floor”, and (iii) to take the points of view of the participants as a starting point for an open discussion. All three choices were methodologically thoroughly informed and well-elaborated from a practical perspective. Furthermore, considerable thought was given to the question of how to limit the range of topics that legitimately can be put up for discussion without vesting too much power in the team of analysts. When it turned out that the input of the participants initially led to a short-term, problem-oriented focus, moreover, a methodical effort was made to widen the project’s horizon and to invoke a more solution-oriented attitude among participants.

The project resulted in a ‘knowing what to do’ vis-à-vis the crop-protection issue. It yielded two scenarios that depicted a potentially feasible future for Dutch agricultural practice in regard to pest control. It systematically put on record the potential options for change that in certain circles were being discussed, yet which had not yet found an institutional basis. While hence the project’s findings as such were not ‘new’, its value to those who appreciated the endeavour was that it “finally put these insights down on paper” (Van der Gaag, personal communication, December 1, 1998). In addition, the elaboration of the most far-reaching ideas (“system oriented prevention”) in concrete case studies was a new contribution to this discussion.

Thus, the project was successful in achieving its intention to explicate and make use of knowledge and insights that were tacitly available yet that stood little chance of having an impact on the dominant discussion. The question is whether the Gideon project did provide a sufficient basis for the now explicated and combined “phronetic” insights to practically contribute to change.
Method, practice and impact: some observations

The empirical material of the Gideon case shows that learning among participants took place to the extent to which these found the specific project results meaningful in their professional practice. Learning processes occurred when the “claims, concerns and issues” of the participants formed the projects’ analytic starting point, and the deliberations took place in an atmosphere of trust and equality. When these basic conditions were not met (for instance during the sub-group session on the feasibility of the ‘ecological scenario’ that was characterised by an imbalance of power between participants), this had an immediate impact on the contents and proceedings of the project and on the project’s potential to induce learning.

Among the reasons why the ‘knowing what to do’ had such a modest impact among the project’s addressee, Parliament, was the mismatch between the project’s methodology and the choice of strategy to transfer its findings to its audience. The mismatch was not merely a result of a difference in view between the Rathenau Institute and the project team. A close reading of the empirical material shows that it was present in the methodical and strategic considerations of both.

The project team, the commissioning institute and the advisory board all held specific views on strategy. For each, the adopted methodology at first glance seemed to suit their purposes. After some time, all parties involved came to realise that in spite of a seeming agreement on the methods and direction of the project, the differences in intentions put a strain on the project’s course. In practice, in the course of events, methodical ideas and strategic considerations were discussed time and again on an ad hoc basis. This led to a constant trade-off between the two, as a result of which the project’s convincing power (in either way) was weakened.

The institutional position of the commissioning institute and the implementing research institutes (with the exception of the CLM) in the agricultural network, for instance, was rather weak with regard to crop-protection. From a methodical point of view, the project team considered this an asset. A newcomer in the field, it expected the project to be conceived of as an impartial platform for deliberation, which might be in a position to throw a new light on the issues at stake. Because of the particularities of the arena in which crop-protection was a topic for discussion (which was highly polarised) and because of the characteristics of the issue at stake (which was technically and legally highly complex), this hope was idle. The Rathenau Institute in turn was aware of this and made a conscious effort to counterbalance the lack of ‘weight’ by providing accurate and scientifically robust information. However, the publication of the preliminary findings in practice turned out disadvantageous to the project’s reputation.

A similar failure of judgment, in retrospect, was the project team’s decision to outline the trajectories, in the form of a description of “building blocks”, by which the two scenarios could be realised in future. This choice was motivated by methodical consid-
erations (the potential bottlenecks that participants indicated were transformed into design criteria for the desired future). Yet, the exercise was also considered of strategic importance as it could indicate the practical, feasible steps to be taken, for instance to the Members of Parliament that the project addressed. Given the polarised and “expertise-laden” field, in retrospect, this may be considered a misjudgment. Unlike the two scenarios, the building blocks were not considered a relevant addition to the knowledge that was already available. Rather, it was seen as evidence of the poor understanding of “what was really going on” by either the project team or the participants involved (not the traditional front men in the crop-protection discussion). This backfired on the trust that the commissioning institute had in the project. The reception among the advisory board members and the field in general caused the institute to worry whether the end product might comply with the institute’s quality standards. It put therefore a clear mark on the project’s (admittedly inchoate) results in a way that opposed the methodological precepts by which the project initially had been set up. In this perspective, also the choice to focus on a clear and concise presentation of the findings rather than on a description of the deliberation process and a focus on “vicarious learning” by prospective readers may be understood.

Hence, as these examples show, in practice the methodological choices (which implied non-interference with the contents of the analytic process) and the strategic aspects of operating as a knowledge institute in a power-laden context were uncomfortably at odds with one another. As a result, all parties involved in the Gideon project in hindsight express a similar frustration: one can lead a horse to water but one can’t make it drink.

The Gideon project raises the question whether and how informing Parliament is an effective strategy for phronetic TA to influence policymaking in a politically highly polarised context on a technically highly complex issue. While this may be considered a practical question per se, depending again on context-related and issue-related characteristics of the issue under scrutiny, it is also an ethical question that touches on the issue of the primacy of politics and the legitimacy of an interpretive TA’s findings.