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ARTICLES

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INNOVATIVE DECISION-MAKING ON INFRASTRUCTURE AND ENVIRONMENT. Experiments with network management in the Netherlands

Abstract: This article elaborates on the proposition that to bring environmental aspects into the planning of large-scale public works in a responsible way, it is imperative to temper the emerging form of adversarial interaction, turning it into a more collaborative form. To this end, it is necessary to develop a different organisation of the decision-making process. The strategy on which that process is based is called network management. In this article, two cases are presented in which network management has been applied in the Netherlands. One of these concerns the expansion of the Dutch national airport, Schiphol. The other case deals with the expansion of the port of Rotterdam. Finally, the experiences with network management are assessed from three perspectives.

Key words: environmental policy, network management.

1. INTRODUCTION

Important decisions on infrastructure usually involve many actors, each of whom brings a special interest to bear. In this context, the environment is no more than one of numerous interests in the arena. When the economic stakes are high, the environmental interests are often forced into a defensive position. It is not unusual for this to lead to highly conflictory situations. These, in turn, may cause policy development to stagnate.

The question arises whether the environment and the economy should be seen as intrinsically opposing interests. When this is presumed to be the case, it is more or less taken for granted that a form of adversarial interaction will

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develop among the actors involved. In this type of interaction, those who represent an interest assume that the advantage to be gained is limited. They assume that one side's gain, in the sense of attainment of his own goals, is always another side's loss. The actors perceive each other as opponents in this form of interaction. And they act accordingly. During their interaction, the actors emphasise their differences, not that which they have in common. They provide information that can reinforce their own position, and the actors attempt to restrict any discussion to policy alternatives that serve their own interests (Gray, 1989). Indeed, adversarial interaction is competitive and takes place in an atmosphere of distrust.

Alternatively, assuming that in principle the environment can be reconciled with the economy, another form of interaction is possible. This may be called collaborative interaction. According to this model, the parties seek opportunities to achieve consensus on a policy problem. Their joint quest for options that each of the parties can endorse takes place through constructive confrontation of the diverse interests (Susskind and Cruikshank, 1987). The parties perceive each other as being mutually dependent. Specifically, they need each other if the outcome of the interaction is to be satisfactory to every one of the participants. They examine the available information jointly, looking for solutions that do justice to as many of the diverse interests as possible. In this way, they try to widen the range of policy alternatives rather than to narrow it down. Collaborative interaction is constructive and takes place in an atmosphere of mutual trust.

To bring environmental aspects into the planning of large-scale public works in a responsible way, it is imperative to temper the emerging form of adversarial interaction, turning it into a more collaborative form. This form of collaborative interaction can be stimulated by adopting a different organisation of the decision-making process, i.e. to use a strategy of 'network management' (Gage and Mandell, 1990; Glasbergen, 1995). Network management may be seen as a specific form of alternative environmental dispute resolution (Bacow and Wheeler, 1984; Bingham, 1986; Susskind and Cruikshank, 1987; Rabe, 1988).

2. TYPES OF NETWORKS

Network management is based on the standpoint that the independent steering capacity of the actors who bring environmental interests into the decision-making process should be relativised. Environmental interests must be pursued in a situation of complex dependency relations between the actors

concerned with a policy problem. These government authorities and civil organisations represent different interests. The environmental interest is thus one of several under consideration. Moreover, the actors involved are not related to each other hierarchically.

The body of actors who have an interest in a policy problem may be called a 'policy network'. When the policy problems are complex, this network often takes on the structure of a market. This is the theoretical variant lying at one end of a continuum of possible policy networks. At the other extreme we may situate policy networks with an organisational structure. Policy networks with a market structure are characterised by the presence of relatively autonomous actors and a diversity of conceptions of the problem. Policy networks with an organisational structure are characterised by hierarchic relations and a common goal.

These two networks have to be activated in different ways (see figure 1). Here, we limit the discussion to policy networks with a market structure.

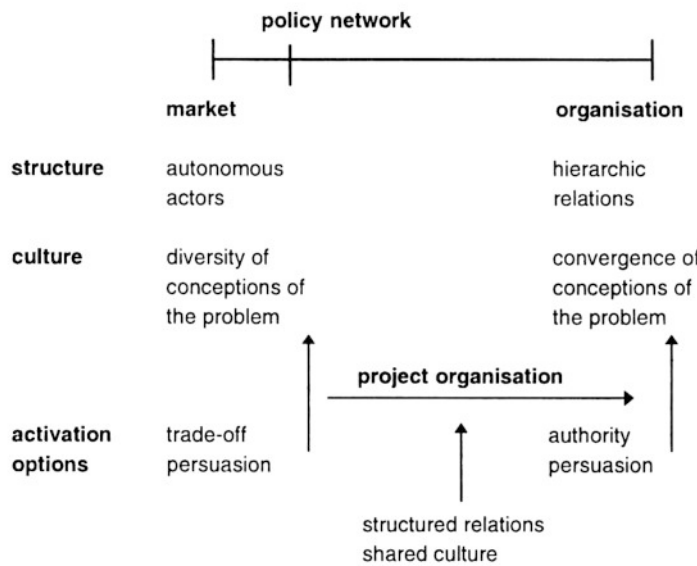

Fig. 1. Types of networks and ways to activate them

In these policy networks, the problem-solving capacity is fragmented, whereby the actors need each other in order to tackle the problem effectively. The management question is how the actor system can be mobilised to undertake co-operative action. That is, how can the actors be mobilised to take collective or parallel action in regard to the policy problem?

In principle, there are two ways to activate networks with a market structure: by trade-offs and by persuasion. Trade-offs involve an exchange of

goods and services that are valuable to the parties. An effort is made to ensure that each of the parties comes out ahead. When there is no advantage – or none is perceived – the trade-off relations do not materialise. Persuasion entails an exchange of ideas. This exchange goes on until the consensus is firm enough to formulate a common goal and a joint approach to the problem. With persuasion, an effort is made to generate a common culture, expressed as shared norms and values.

Management by way of trade-offs and persuasion has drawbacks either way. Therefore, in the policy arena, these two methods are generally used in tandem. Furthermore, the process of trade-off and persuasion will have to be organised. In other words, organisational elements must be introduced into the market structure. The most appropriate form is a temporary framework: the project organisation. At this point, we can describe network management as the creation of a temporary organisational framework for a policy problem, with the intent of promoting trade-offs and persuasion.

3. CHARACTERISTICS OF NETWORK MANAGEMENT

Network management should be conceived as a way of conducting policy in which the reciprocal dependency among different governmental entities and between governmental and private organisations can be put to use. In recognition of the dependency relations, a process of interaction between the actors is initiated in a new organisational framework, wherein methodical steps are taken. With regard to environmental issues, the characteristics of this management strategy are as follows (Glasbergen and Driessen, 1994, p. 32; Glasbergen, 1995, p. 16):

1. The point of departure is the idea that government authorities and organised societal interests need each other in order to effectively tackle policy problems in which environmental aspects play a role.

2. To formulate an approach to a problem, a structured process of interaction should be initiated between those public and private actors who are most involved in the policy problem.

3. In the interaction process, the environmental goals should be placed in a wider developmental perspective. Besides environmental goals, socio-economic and physical planning goals are given due consideration.

4. In the developmental perspective, there is an emphatic effort to create new opportunities for those societal interests that are forced to reorientate as a result of environmental objectives.

5. The developmental perspective is expressed in a 'package deal' whereby each of the relevant civil actors eventually has more to win than to lose.

6. In order to bring this package deal into effect, a program is determined jointly, and together the parties monitor its progress.

Network management differs from more traditional forms in that government organisations do not act as autonomous authorities; they do not use their hierarchic position to prescribe alternative behaviour for other actors. In fact, government organisations play a dual role. On the one hand, they are representatives of specific public interests. In that sense, they constitute one party among the parties. The interests of government organisations can clash too. On the other hand, one or more government organisations act as an intermediary in the network. In that role, the government has a special responsibility, namely to facilitate the policy process.

In the following, two cases are presented in which network management has recently been applied (see also: Glasbergen and Driessen 1993; Ministry of Housing, Spatial Planning and the Environment, 1995). One of these concerns the expansion of the Dutch national airport, Schiphol. The other case deals with the expansion of the port of Rotterdam.

4. PLANNING THE SCHIPHOL AIRPORT

4.1. Outline of the problem

For several decades, Schiphol has been the central airport of the Netherlands. This airfield – with a function for national, continental, and intercontinental air traffic – lies in the immediate vicinity of the Amsterdam agglomeration. Accordingly, the quality of the living and working environment in this region has been under pressure for years. Nevertheless, there are ambitious plans to expand the airfield. The increasing competition of other airports in Western Europe plays an important role in these plans. In terms of passengers and freight, Schiphol ranked fourth among European airports in 1993 (after London, Paris, and Frankfurt). In that year, about 20 million passengers were transported by way of Schiphol, and the airport handled about 700 000 tons of freight.

According to the Dutch government, Schiphol will grow into a mainport (Ministerie van VROM, 1988). In other words, it will become an airport that functions as a hub for the European and intercontinental air traffic. Schiphol's expansion is considered to be important for the country as a whole, in view of its function as an economic growth pole.

On the one hand, the airport serves the interests of the national economy. But on the other hand, the environmental conflict that has arisen with regard to

Schiphol is primarily regional. Residents of the area in a 10–15 km radius of the airport are subject to severe nuisance, including noise and stench. Furthermore, the risk of hazard is highest there. This brings us to the heart of the matter. From the perspective of the environment, restrictions should be imposed on air traffic activities. Yet from an economic perspective, these activities are highly valued.

This conflict between the interests of the national economy and the regional environment has been going on since the 1950s. Diverse attempts have been made in the past to relieve the tension. Nonetheless, these attempts failed, in part because of dissent within the government on the direction in which to look for a solution. Indeed, there was no agreement on allowing the airport to grow. Allowing further growth would entail making decisions on the runway configuration and on ways to deal with noise nuisance.

4.2. The initiative stage

A new attempt was made at the end of the 1980s to tackle the problem successfully. The starting point for this new approach was the development of a two-pronged plan. The plan would have to form the basis for further growth of the airport. But at the same time, it would have to contain measures to improve the quality of the daily environment of people working and living nearby. In other words, an effort should be made to formulate a development perspective for the region surrounding Schiphol that would serve both economic and environmental aims.

This approach was grounded in close collaboration between government authorities and the private sector. All relevant actors were mobilised to help forge a plan. Indeed, it was felt that only an inclusive procedure could pave the way for consensus on what the most desirable development of the region around Schiphol would be. This procedure drew in several ministries: Environment, Transport and Public Works, and Economic Affairs. It also included the Province of North Holland, the Municipalities of Haarlemmermeer and Amsterdam, the company that operates the airport (NV Luchthaven Schiphol), and the main Dutch airline (KLM). The operating company is wholly owned by the government. KLM, which is partly government-owned, has a large stake in the expansion of the airport.

During the formulation of the plan, these parties would have to reach consensus on a development perspective for the region around Schiphol. Moreover, they would have to agree on measures to realise their vision. Once all parties had agreed to participate in the project, a joint statement of intent was prepared in the form of a covenant. This document specified the agreements made on the objectives of the project, the policy aims, and the project

organisation, including its financing. To move ahead, a project organisation was established. This consisted of a steering committee, invested with decision-making authority, and a project group, charged with preparing policy proposals and giving advice. Neither community groups nor environmental groups took part in this project organisation, because they were not willing to endorse the economic aim of the project.

4.3. The planning process

Formulation of the plan took place in three stages. These may be distinguished in terms of the different strategies that were employed to achieve consensus among the parties. In brief, the first one was the cognitive stage, which was aimed at gathering and exchanging information; the second was the productive stage, aimed at reaching a decision on the main issues; and the third was the formalising stage, focused on finalising the decisions and on legitimating the plan in the social and political arenas. It should be kept in mind that these stages were not distinguished beforehand but could only be determined in hindsight (Glasbergen and Driessen, 1993).

During the cognitive stage, the strategy of the project co-ordinator was to use research and information exchange to bring the various parties closer to each other. The assumption was that the exchange of information would help the parties to appreciate each other's standpoints. And it was hoped that the heightened empathy would foster the process of reaching consensus. A research program and the development of scenarios were core elements of this stage. The project group put together three scenarios. Each one was based on the number of passengers that could be handled annually and the corresponding number of flights at the airport. Looking ahead to the year 2015, a high (60 million passengers), a medium (40 million), and a low (20 million) projection were made.

The productive stage was no longer concerned with broadening the scope of information. Rather, it was focused on narrowing down the amount of relevant information and on decision-making. For this new 'interplay', aimed at actually reaching a decision, a facilitator was engaged. The task of this individual was to guide the negotiations between the parties. The person engaged to perform this role took an independent position between the parties and was well informed about the issues. The approach taken by the facilitator was aimed at bringing the main bottlenecks to the fore. In this way, opportunities could arise to reach consensus among the parties, at least on key points. Furthermore, the working method created a strong reciprocal relation between the project group and the steering committee. The steering committee was confronted with issues that the project group had pared down to size. The steering committee reviewed the

issues and approved the solutions offered by the project group. In the event that approval was withheld, the issue was sent back to the project group, where renewed attempts would have to be made to reach consensus. Thus, a cyclical process came about. The approach consisted of five steps, which proceed as follows:

1. First of all, an inventory was made of the most important points for discussion. This was done with the aid of blank sheets of paper taped to the wall, on which possible topics were posted. Using coloured stickers, the members of the project group could indicate their assessment of the topics. They had to name the topics that would require a statement. In this fashion, the main issues were distilled. The following points for discussion emerged from the inventory: the configuration of the runway system; the abatement of noise nuisance; a regulation for night flights; the reallocation of activities to other airports (e.g. training flights); the substitution of high-speed train for continental flights; infrastructure around the airport; development of industrial premises; taking action on air pollution; financing of the measures; and the procedures for decision-making once the plan has been established.

2. Subsequently, the problem had to be defined for each topic. Some of them were split up into subsets of the problem. For each of these (sub) problems, an attempt was made to give a precise description.

3. When the inventory was complete, the members of the project group were asked to offer a solution for the various problems. As a rule, the members with the deepest involvement in a problem and the most divergent opinions were supposed to write a joint memo on the question. In case they could not agree on certain aspects, the differing insights could be expressed.

4. Ultimately, this approach resulted in a number of memos on the problems that emerged during the inventory round. These reports identified some possible directions for solutions. The documents were circulated among the members of the project group for their comments. Then the memos and the notes made on them were collected. At that point, the facilitator set about rewriting them in the form of so-called 'reports on decision points'. The reports were organised in the following way. For each topic, a proposition was formulated. It was accompanied by proposals for a direction in which to find a solution and, where possible, proposals for concrete decisions.

5. The reports on decision points were finally submitted to the steering committee for a decision. In case the committee was unable to approve any of the proposals, that particular topic was sent back to the project group, accompanied by the committee's comments, and the procedures were repeated.

This stepwise approach was repeated in three rounds. In these three cycles of decision-making, all of the discussion points were dealt with. Consensus was reached on the main thrust of these points. Thus, the approach was successful and led to a draft plan on which all parties agreed (PMMS, 1991).

Up to that time, the process of negotiation had taken place within a closed circuit. In fact, only those parties represented in the project group and the steering committee had been given the opportunity to influence the development of the plan. Once the draft plan had been made public, the process of consensus building moved to a new level: the formalising stage. This stage was mainly concerned with attaining social and political legitimacy for the plan. Concretely, this meant that the strategy had to be submitted to a round of public discussion. Moreover, the reactions of the public would have to be incorporated in a revised version of the plan. Finally, the strategy had to be submitted to various government bodies for decision-making: to Parliament, to the Provincial Council of the Province of North Holland, and to the Municipal Council of both Amsterdam and Haarlemmermeer. The original version of the plan was adapted on some marginal points. Nonetheless, the consensus between the parties remained intact in this stage too.

4.4. Results of the planning process

For the first time in history, in this project the parties were successful in achieving consensus on the future development of the region around Schiphol Airport. This perspective was elaborated in a strategy that stipulates the measures to realise this vision. A few crucial elements of the plan can bring its economic and environmental aims into closer alignment with each other. For instance, agreement was reached on reduction of noise nuisance and the risk of hazard. This agreement entails plans to adjust the airport's runway system (building a new runway) and to cease admitting noisy aircraft. Furthermore, an effort will be made to induce more passengers to choose the high-speed train – a more environmentally sound mode of transport – for their mid-range journeys (up to 1000 km). In addition, agreement was reached on further sound insulation for dwellings in the vicinity of the airport.

With regard to the economic aim, it was agreed that the growth of Schiphol up to the year 2015 must be cut back somewhat (to 40 million passengers annually). Meeting that target, the quality of the residents' living environment – in terms of noise nuisance, stench, safety, and air pollution – will not decline substantially in comparison to the benchmark year 1990. In this sense, the target does not promise substantial improvement in the quality of life in the Schiphol region. Nonetheless, no drastic degradation is expected either, despite the increase in air traffic.

5. PLANNING THE ROTTERDAM HARBOUR

5.1. Outline of the problem

The area around Rotterdam harbour resembles that surrounding the Mainport Schiphol. In both places, tension exists between mainport development and the quality of the living environment of people in the vicinity. Rotterdam is a highly urbanised and industrialised area, covering a surface of 60 000 ha. Its million inhabitants are spread over 15 municipalities. The Port of Rotterdam, which is the world's largest harbour, is the economic motor of the area. With an added value to the national economy amounting to 10%, the economic importance of the harbour is great indeed.

In comparison with other parts of the Netherlands, Rotterdam harbour is faced with a wide-ranging environmental challenge. This is the consequence of the large-scale industrial activity related to the port. Problems are manifest with regard to security, air pollution, water and soil pollution, stench, and noise nuisance. Over and above these issues, space is at a premium. An estimated 1500 ha of extra room is needed to develop the harbour. Another 1500 ha must be reserved for housing. In addition, space has to be set aside for recreation and nature development. Another major issue is the area's accessibility. In the absence of substantial investment in roads, railways and hydraulic works, the situation will only get worse.

In the past, policy was formulated by the national government in conjunction with both the province (the relevant regional authority) and the municipalities, with a view to reducing the tension between the mainport and the environment. Typically, the initiatives were developed autonomously by the individual government agencies. Success was noted in some sub-areas (for instance, with regard to the reduction of SO_2 emissions). Yet the policy proved to be less effective than anticipated. One obstacle to be overcome in developing an effective policy concerns fragmentation of authority. The competence for policy development is spread over diverse government levels and policy sectors. Each of these formulates its own plans. As a consequence, the implementation of the policy runs into major co-ordination problems.

Gradually, some of the parties involved have realised the need for a more integral approach to the issue. At the end of the 1980s, the Ministry of Environment took the initiative to get an integral planning process started, in conjunction with the other government authorities and representatives of the private sector (Ministerie van VROM, 1988). As in the case of Schiphol, a dual objective was formulated. At the same time that the mainport function was to be

bolstered, the quality of the environment would be improved. By the end of 1993, a strategy was in place.

5.2. The initiative stage

The first discussions on the development of an integral plan occurred in early 1989. Yet the process of formulating the plan could not officially start until early 1992. In the meantime, consultations were held between the Ministry of Environment and local authorities: representatives of the province of South Holland and the Municipality of Rotterdam. The other municipalities were drawn into the consultations later, while the rest of the parties (representatives of the private sector) followed the discussions at a distance. The initiative stage was characterised by a high degree of mutual distrust. Several issues were brought up for discussion. Some parties wanted to accentuate resolving short--term problems. Others were interested in developing a perspective for the long run, as was the Ministry of Environment. A great deal of discussion was also focused on the scope of the plan. Certain parties found that it should concentrate on problems amenable to zoning, such as noise nuisance or hazard. Yet others thought that an integral approach to the environmental issues was preferable. The discussion also dwelled upon the procedures to be followed, the project organisation, tasks and competence, etc.

In this phase, the region still had to be convinced of the need for joint integral planning. The regional authorities had also serious reservations about the role of the national government. In the past, its interference had been experienced as dirigistic. This is not very suprising, considering that the threshold norms for many environmental problems are set at the national level. In the region, people thought the proposed approach was only intended to increase the pressure to continue setting aims and standards. These aims and standards were felt unrealistic on some points. Even with the help of a mediator, the discussion on the content of the plan dragged on for a long time.

A breakthrough in this situation was achieved when the participants had determined their own position among themselves. The Municipality of Rotterdam developed a plan for the harbour in which the long-term objectives for expansion were specified. The Harbour Plan proposed to double the volume of goods transferred between 1990 and 2010. It also suggested a considerable expansion of the harbour area and industrial sites, as well as providing the infrastructure for road, rail, and water connections. The other municipalities in the area formulated a development plan for the region. In this plan objectives on regional economic development, employment, housing, mobility and environmental development were set. These plans brought the mutual dependency of the actors into full view.

At the end of 1991, a start-up covenant was prepared, stating the dual objective. This document cited the agreements on human resources, financing, and the organisation of the process of formulating an integral plan. Several ministries were parties to the covenant: Environment, Transport and Public Works, and Economic Affairs. In addition, the province of South Holland and the municipalities were signatories, as were three organisations representing firms in the region. Environmental organisations did not have a seat in the project organisation. But they would be kept informed of its progress.

To move ahead, here also a project organisation was established. This project organisation consisted of a steering committee, with decision-making authority, a project group, charged with preparing policy proposals, and a main advisory team. The project group and the main advisory team were managed by an independent mediator.

5.3. The planning process

Like the Schiphol case, here too three stages can be distinguished in the planning process: the cognitive, the productive, and the formalising stage (Glasbergen and Driessen, 1993).

In the course of the cognitive stage, the project was specified in terms of process and content. The Harbour Plan was accepted as the point of departure for the development of the plan, alongside the regional plan and the aims formulated in the various national memoranda. Targets were set – i.e. sectoral ideals – for the development of the harbour and industry, for environmental objectives, and for the physical development of the area (for instance, housing and public works). The targets for each of these sectors were then compared. An inventory was made of the areas where the targets and the objectives would be difficult to achieve. Taking this a step further, an inventory was made of the bottlenecks. One problem, for instance, was how to attain the national goal to reduce CO_2 emissions. The progress was hampered by the realisation that expansion of the harbour would hardly yield extra income from environmental levies. To compensate, it was determined that supplementary measures would be needed, also in the private sector. Nevertheless, the formulation of the plan stagnated when choices had to be made.

During the productive stage, a specific working method was followed in order to break through the impasse that was threatening to occur. Actually, two routes were taken. One of these went by way of the mediator, who approached the individual parties to the covenant by organising consultative rounds. The mediator made several drafts of the plan. Meanwhile, the parties contacted each other bilaterally. Gradually, in this way the contours of the plan took shape.

Negotiations still took place in small groups. When the end was in sight, the negotiations took place in an 'editorial committee'. Its members included one delegate from the ministries, and one each from the province, the Municipality of Rotterdam, the other municipalities, and the private sector. At that point, not only the new projects but also those that were already scheduled or underway were specified in relation to each other. The outcome was a proposed strategy that was endorsed by all parties.

This plan was presented in numerous public meetings during the formalising stage. It was also presented to political bodies such as Parliament, the provincial government, and the municipal councils. In 1993, the relevant parties signed an agreement to implement the plan. The total investment amounts to 8 billion guilders over a period of 15 years. The financing has been arranged for the first year (8 million guilders). For the second phase, there is a statement of intent to contribute funds. For the third phase, there is a statement of intent to implement the plan. These agreements pertain to both government and private-sector investments. But it is governments in particular that will have to invest heavily.

Although the environmental organisations in the region were invited to endorse the plan, they declined. They were not willing to accept the expansion of the harbour. For the next part of the program, an organisation has been created to monitor the implementation of the plan. At the same time, a monitoring system is being established to keep track of the development of environmental quality in the area.

5.4. Results of the planning process

The plan consists of a perspective on the future development of the area (ROM-project Rijnmond, 1993). Central to this perspective is the development of the mainport and the improvement of the quality of the environment for people in the vicinity. In order to turn this vision into reality, the plan defines a series of projects. Some of these refer to policy initiatives that are already underway. The plan reconfirms those projects in their mutual relations and in the context of the new policy initiatives. The new projects differ widely in content. In general, they concern: the creation of (physical) space for activities related to the port and industry; the improvement of accessibility to the port and the industrial area; controlling and steering mobility; improvement of the quality of the environment by the enterprises; and improvement of spatial quality in urban and rural areas.

It may be concluded that the parties have at last succeeded in jointly formulating an integral perspective for the area. Furthermore, an initial step has been taken toward carrying out concrete measures by which that perspective can

actually be realised. The harbour has won a clear victory; it will be permitted to grow. The quality of the environment will improve greatly on all fronts except that of CO_2 emissions. In addition, physical measures have been formulated in the area of housing construction, nature development, and steering of mobility; these proposals will enhance the living environment of the region. In this light, then, all relevant parties have benefited in the end.

In view of the long term of the implementation, the strategy does seem vulnerable. But since the implementation is monitored, it is possible to make timely adjustments. In this way, a learning process is built into the program.

6. EVALUATION

How should we assess the forms of network management applied in the cases discussed above? There is no unequivocal answer. It is simpler to consider the cases from various perspectives, three of which we take here (Driessen and Vermeulen, 1995). The first perspective takes the existing stalemate as its starting point and focuses on the course of the process. The question arises whether the application of network management actually caused the breakthrough in the stalemate, opening the way to decision-making. The second perspective is concerned with legitimacy. Here, the assessment is related to the democratic dimension of the decision-making procedures and to the support for the policy in the society at large. The third perspective is directed toward goal attainment. The question is whether the environmental goals have come any closer to the other goals of the participants in the process.

The most unambiguous assessment can be made from the perspective of stalemate at the starting point. In both cases presented here, we see that network management helped get decision-making that had stagnated back on track. In the negotiating process, communication barriers were bridged. This was accomplished by viewing the planning of mainports in a more integral way than before. Various aspects of the problem – namely the environment, the economy, and physical planning – were not only charted but also seen in their interrelations. Furthermore, these aspects turned out to be entirely acceptable to all relevant parties. The environmental aspect in particular was given a prominent place on the agenda. Unlike previous discussions on the case of Schiphol Airport, economic development potential was related to environmental objectives. In the case of Rotterdam Harbour, clear progress was made in regard to forming a development perspective, exchanging information, and monitoring environmental impact. In addition, a willingness to co-operate was generated, which led to the establishment of new policy and closely monitored programs to implement them.

From the perspective of legitimacy, the assessment contains more subtleties, in the sense that some of the risks of network management emerge. In a hierarchic situation of control, governments can steer in a general and a biased fashion. In contrast, in the network situation, wherein hierarchy is virtually absent, the actors manage each other. For government authorities as well as organised societal interest groups, this is a relatively new position. If the relevant government organisations can reach agreement with the private interests regarding the content of a given policy and the measures that should be taken, then it is likely that a wider basis of support for policy will be created. The formal decision on the measures to be taken will nonetheless always have to be made in the democratically elected bodies under which the issue resorts. The rest of the civil organisations and individual citizens who have not been involved in the project may make their interests known through public discussion. They have the right to lodge an objection to the plan. But the chance is great that these appeals will run up against a closed door. The reason is that the government organisations have allied themselves with the private organisations by making agreements with each other. If one of the government organisations defaults on these agreements, then the other parties to the contract will accuse that organisation of being unreliable. But if it does live up to the contract, then the citizens might accuse the government of politicking behind the scenes. Thus, with regard to democratic legitimacy, a dilemma emerges. And it can only be resolved when the planning process ensures maximum transparency.

Yet the civil organisations are also faced with a dilemma. On the one hand, they are able to press their case in a structured consultation with government representatives and thus bring their interests into the decision-making process more explicitly and at an earlier stage. On the other hand, there is a good chance that the participants will have to commit themselves to a second-best solution in the course of the negotiations. This can undermine the credibility of these organisations among their constituencies. To prevent this, frequent feedback is imperative.

The third perspective is focused on goal attainment. In evaluation research, this perspective is the most common of the three. The cases discussed here can only be given an initial assessment. The reason is that the implementation phase has just started and will still run for at least a decade. Further, comparison with a control group or 'zero alternative' is not very feasible. But it should be added that, unlike a more hierarchic steering, this assessment perspective already plays a role in the process of policy development. In the course of that process, the actors involved will have constantly been making estimates of the material added value, assessing the content. The continuation of their participation, which is voluntary, is only likely if the actors retain a sense of mutual

advantage. The case of Rotterdam Harbour reveals that the tedious first stage can be explained by the lack of insight in this added value. The two cases allow us to make the general conclusion that the quality and the results of the environmental input have been increased by network management. A clear gain has been booked with reference to the existing situation. Without network management, the prospects for positive effects on the environment would be much less promising in the cases studied. The limits lie where environmental aims form such a threat to social activities that they cannot be continued in an economically viable way. In this vein, the national objective for the reduction of CO_2 emissions in the area of the harbour of Rotterdam could not be achieved. However, this is a problem that transcends the region. In regard to the case of Schiphol Airport, the expansion was carried out without an increase in the number of people affected by noise nuisance. Of course, in the long run, expansion will slightly increase the environmental load as a result of more flights (and thus higher emissions of NO_x and CO_2).

7. CONCLUSIONS

In comparison with traditional forms of government control, network management has several specific characteristics. The most obvious one is that the achievement of environmental goals is not viewed in isolation. Environmental objectives are related to other social aims. Further, there is less concern with the intended outcome; instead, more attention is given to the process that has to be started in order to attain that desired situation. Network management attempts to formulate a development perspective that is widely shared. The route to achieving this goal is determined and the first steps on that path are taken. Finally, network management makes less use of coercive instruments and more use of consultation and trade-offs. This is appropriate to a government that puts less emphasis on regulating and more on encouraging civil actors to govern themselves.

A few strong points of network management may be deduced from the cases discussed here. First, its mobilising character should be mentioned. This is expressed in the collaboration between actors with divergent interests. Their concerted effort permits breakthroughs in stagnation in the course of conducting policy. Another strong point is that network management employs working methods that are tailored to the situation. In other words, a suitable relation is established between the substantive characteristics of a policy problem and the way in which this problem can be effectively dealt with. Moreover, network management leads to greater creativity in finding directions for solutions.

Because actors collaborate in a temporary organisational framework, it is possible to generate options that are difficult to bring up within the existing administrative frameworks.

But network management is also risky. The first risk is that consensus may be reached at a level whereby all parties are satisfied but the environmental problem remains unresolved. The success of network management should not only be measured in terms of whether or not consensus has been achieved. It should also be assessed by whether or not the achieved consensus has actually led to an effective approach to the problem. There are also risks in connection with carrying out the policy. The cases discussed here involve long-term processes that still harbour numerous uncertainties. Thus, it is imperative to ensure adequate monitoring of the follow-up process, whereby the joint responsibility for the implementation is secure. Finally, legitimation of the policy can also entail some risk. A convincing outcome of the process of network management will have to be able to hold its own in the public debate to which the outcomes can lead.

It seems that network management is most promising when it is applied in situations displaying strong dependency relations among public actors or between public and private actors. It should be recognised that the environmental problems in question cannot be resolved without taking these dependency relations into account. Further, the application of network management is most appropriate in situations where the discrepancy between the intended and the actual condition of the environment is greatest (Glasbergen and Driessen, 1994). In such situations, current social activities will be under acute threat. Then, a drastic adjustment or reorientation of these activities is advisable. In a democratic society, it is virtually impossible to impose such thorough adaptations upon a social sector by way of coercive measures. Reorientation requires time and creativity. It makes heavy demands on the capacity of the affected organisations to change. In this context, network management is a strategy for control that offers opportunities to stimulate the desired change.

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