Strategies for future agricultural control policies from the Dutch perspective

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ABSTRACT

The Dutch agricultural sector is of significant importance to the Dutch economy, but is also one of the major contributors to the total environmental pollution of the country. At the moment the environmental policy for this sector is centered around two major issues, manure/ammonia and pesticides. The manure-surplus causes pollution of soil, air, ground- and surface water with phosphates, nitrates and ammonia. And although emissions of pesticides are being reduced, the quality of the surface-water is not improving.

Under the influence of an increasing market-orientation on both national and international level, a growing insight in the need of regional differentiation and a growing environmental awareness outside the Ministry of the Environment, the way environmental policies are developed is changing in The Netherlands. More and more, parties concerned are involved in an early stage of policy-development, resulting in a policy oriented on objectives that requires a high level of selfregulation instead of a policy based on strict rules and set measures.

1. INTRODUCTION

In the past decades environmental policy regarding the agricultural sector has been developed. This policy has been successful to a certain extent in certain field, but the objectives that have been set will be difficult to meet. That is the reason why an evaluation of these policies is necessary. In the perspective of some major developments on both national and international scale, new strategic lines are formulated.

This paper presents a short overview of the main environmental issues in the agricultural sector, a set of specific developments on both national and international level that have a specific influence on the Dutch environmental policy-development, new strategic lines that have been formulated and the results in some branches of the agricultural sector so far.

2. MAIN ENVIRONMENTAL PROBLEMS

The Dutch agricultural sector consists of 100.000 companies, covering 1.8 million hectares of land, more than half of it covered with grass. Production and incomes differ per branch, but with an export balance alone of over 10 billion a year the agricultural sector makes a significant contribution to the Dutch economy.

Unfortunately, they also make a significant contribution to the total environmental pollution of the country; for example, 90 % of the ammonia-emissions and 50% of the emissions of methane and di-nitrogen oxide can be attributed to agricultural sources.

At this moment the environmental policy for the agricultural sector is centered around two major issues: manure/ammonia and pesticides. A third important issue is energy. Other issues, like contamination with heavy metals, non-CO_2 greenhouse gases, NO_x, noise, odor and waste-management are either dealt with on a larger scale or have less political priority at the moment. This does not mean the agricultural sector is not doing anything about them.

Manure and ammonia

Considering the size of the country, The Netherlands have an enormous cattle-population (mainly cows, chickens and pigs) that far exceeds the human population. Besides producing milk, meat and eggs, these cattle also produce an abundance of manure, that cannot possibly be disposed of in an environmentally sound way. Over-fertilization has led to levels of phosphates and nitrates in the ground that are far too high, causing leaching to ground- and surface water.

Other sectors, like the industry and wastewater treatment plants, also cause pollution with nitrates and phosphates. In the past few years, however, environmental measures have strongly reduced the emissions from these sources.

The agricultural sector has also taken steps to reduce emissions, for example by banning the spreading of manure in autumn and winter and reducing the maximum amounts of manure used per acre. This resulted in reductions of 25% for phosphates and 16% for nitrates in 1995, compared to 1985. Compared to the industry and wastewater plants, however, they have been less successful, and a major effort has to be made to meet the objectives set in the 1995 'Policy Document on Manure and Ammonia'.

As said before, 90% of the total ammonia emission of The Netherlands can be attributed to agricultural sources. Although the negative effects of ammonia are known, it is difficult to make a direct connection between the ammonia-emissions of one particular farm and the ammonia-deposition on a nearby natural area. Without scientific proof, ammonia-reducing policies are not widely supported by the agricultural sector, making them very hard to enforce.

A reduction of 25% has been reached in the past few years, as a result of a set of specific regulations, e.g.:

- Covering of manure-storage tanks.
- Low-emission application of manure, preferably by injecting the manure into the ground. This can reduce emission of ammonia by as much as 95%.
- Low-emission housing, using technical improvements to reduce emission from stables. The techniques are rather expensive, but in due time such stables should replace the old ones.

It has already become clear that the objectives set out in the 'Policy Document on

Manure and Ammonia' (a reduction of 70% compared to the levels of 1980 in the year 2000-2005) will not be reached.

As said before, the objectives for nitrates, phosphates and ammonia will be very hard to meet. The result, on the other hand, will not be good enough to meet environmental standards. The current objectives for nitrate, for example, secure the quality of newly formed groundwater under 85% of the agricultural acreage, but European objectives for surface-water will not be reached.

Pesticides

In 1993, a management-agreement with the sector was reached on the multi-year crop protection plan. This long-term agreement sets different objectives for different years, allowing the sector enough time to take the necessary steps to reduce both the amount used and the level of emission. Evaluation of the results so far seems positive; the set reductions for the use of pesticides for 1995 have been met. Unfortunately, these figures are flattered, a closer look gives a far less positive result.

It is true that the use of pesticides has decreased by 45%, whereas the target for 1995 was only 30-35%. This decrease, however, is mainly caused by tightening up the rules on soil-detoxication. In other areas levels have reduced as well, but not enough to meet the targets. The emission of herbicides decreased 13%, and not the 31% government and sector agreed on. The use of insecticides, fungicides and other agents decreased 4% instead of 23%, and even those 4% are flattered, since mineral oils have been taken into account; the use of fungicides has actually not decreased at all since the introduction of the multi-year plan.

Although emissions have decreased considerably towards soil, air, ground- and surface water, the quality of the surface-water has not significantly improved.

Energy

In developing environmental policy, energy-reduction is increasingly taken into account as one of the environmental objectives that have to be met. As a result, energy-efficiency has grown considerably in the last few years in specific branches like the glasshouse horticulture-branch. The energy-use of the sector as a whole, however, is still rising,

making CO_2-reduction objectives very hard to meet.

3. SETTING

The way in which the Dutch government develops and executes her environmental policy is influenced by a number of developments on both national and international scale. Although these developments are different in their line of approach, they are in a sense closely linked, and result in a "system" where target groups more and more take their own responsibilities, allowing the government to limit its role in the longer term more to the establishment of the framework within which the target groups can exercise their selfcontrol, and facilitating others in taking up their responsibilities.

Market-orientation

On both national and international level orientation on the world market is a rising phenomena. This has considerable consequences for the agricultural sector. In the past, farmers were strongly production-oriented, working for a good harvest that would fetch a good price on auction or with the cooperative. In the dairy branch, for example, an individual farmer, a cooperation, a dairy factory, they would all be just links in a chain of production who didn't really bother about the rest of the chain.

More and more they become market-oriented. This leads to a strong tendency of all parties concerned to concentrate on the total chain of production and to find a way to control this chain. To gain a position on the market and to keep that position, the image of the total branch becomes more important. Some branches turn out to be better equipped for this than others, like the dairy farmers and the glasshouse horticulture-branch. Although economically not always well off, they are better organized and more flexible, enabling them to react faster to the demands of the market.

Environmental legislation plays a complex role in this process. Environmental measures are expensive, thus putting pressure on the prices. It is hardly possible to pass the extra costs for environmental measures on in the prices they get for their products. On the contrary, prices are falling while costs keep rising. environmental measures tend to be

the last drop, and therefore a cause for unrest and protest. The only way farmers are able to meet environmental demands made by both customers and government, is if they are given the scope to solve the problems in their own way, and fit them into their own pace of investment. The more market-oriented a branch becomes, the better it responds to a policy of selfregulation.

Regional differentiation

Up till now, environmental legislation has been made to fit the entire country. More and more it's becoming clear that this might not be the best way to do it, for the simple reason that circumstances differ too much from region to region. A national norm on nitrates that could be met easily on the claysoils in the north might turn out to be nearly impossible to meet on the dry sandsoils in the east of the country, and even if it is met it might not have enough result to reach environmental objectives.

Legislation has to be feasible for a farmer, without losing sight of the economic basis of his enterprise. If environmental measures will cost too much they cannot be implemented.

The farmer is not the only one asking for scope, so are the local and regional authorities like provinces, municipalities and water boards. They want to have the possibilities to adapt the general rules to fit their special situation, and are willing to take responsibility for those adaptations. More and more, the central government enables them to take this responsibility, indicating objectives and frameworks rather than strict rules and measures. For example, an Ammonia Reduction Plan gives a region a certain amount of freedom to indicate how the objectives set out in the Interim Act on Ammonia and Stock Farming will be met. This might result in stricter rules in some areas that are more vulnerable to environmental pollution. A certain limitation of freedom should be made by the national government, to reduce the risk of extreme differences between rules and regulations from region to region and to secure equality of rights.

Regional differentiation is also something that will have to be considered on an international level. At this moment, Europe tends to make general legislation and set general objectives that have to be met by all the member states. The geological and environmental differences between those states are of course enormous; standards that

might work out fine in the dry interior of Spain will probably turn out disastrous in the wet parts of The Netherlands. This results in rules that will have to be far more strict in one country than another, which will have an effect on the competitive position of the countries.

"Environment-included" thinking

In the past decades, care for the environment and environmental legislation have found a place in society. It becomes more and more self-evident to consider environmental issues in all fields and actions. Houses are built with environmentally friendly materials, cars drive on unleaded gasoline, and waste is segregated for recycling in over 80% of the household kitchens. The object of the Ministry of the Environment is that environment is included in the way we think and the way we live. It should become included in the policies of the government, on national, provincial and local level. Other departments should take the responsibility to include environmental issues in their policies and legislation, without direct intervention by the Ministry of Environment. The Ministry of Agriculture, Nature Management and Fisheries, for example, has got the responsibility for the legislation on manure, including the environmental issues involved. What is more, the agricultural sector itself starts to include environmental issues and objectives in their plans and policies.

This changes the role of the Ministry of the Environment. Instead of initiating and developing environmental policies in different fields, the Ministry has to participate, facilitate, stage-manage if necessary, but to allow others to take the responsibility.

In itself this is of course a very positive development, but it does contain a risk. Environment is not the only issue taken into consideration, and interests will be weighted. If a choice has to be made between a certain level of economic growth and the protection of the environment, environmental measures might be considered too expensive. It will have to be the task of the Ministry of the Environment to take care of the formulation of clear objectives and to monitor and evaluate environmental results, to make sure a balance is kept and environmental issues will not be sacrificed for economic growth and financial security.

While the Ministry of the Environment takes on another role, the traditional negotiating

partner of the environmental movement disappears, forcing them to change their approach. This results in an increasing amount of direct contact between environmental pressure groups and agricultural organizations or small groups of farmers, to foster environmental action. Sometimes the environmental pressure-groups more or less force the farmers around the table, threatening with lawsuits or consumer-oriented actions, sometimes the farmers themselves invite the environmental pressure groups to come and talk and try to solve the differences. In all cases, the objective is to find solutions that will benefit both farmer and environment. This might lead to rather small-scale projects, like the protection of birdsnests, it might also result in large scale research project (for example into environmentally friendly ways to grow flower bulbs) or collective plans on regional environmental protection.

Internationalization

The international aspect has been mentioned before. There is a growing recognition of the fact that we have a collective responsibility for sustainable development on a global level. This causes an increasing tendency to tackle environmental issues on an international scale. Sometimes this might mean cooperation with one or two countries on a particular issue, like the cooperation between Belgium, Germany and The Netherlands to tackle ammonia-problems. In other cases, the scale is larger, like the ECE protocols on NO_x and POP's, or the international negotiations on climate change.

Agricultural environmental issues don't have high priority yet on the international stage, but this is bound to change, considering: 1) the amount of transboundary pollution caused by the agricultural sector, 2) the need of harmonization of environmental policy to guarantee a minimum level of environmental quality to all citizens an 3) the need of an equal competitive playing field.

Being a member of the EU, the Dutch government is committed to follow European legislation and objectives and fit them into the national legislation. For example, the European Directive on Nitrates forces the Dutch to take extra measures that will reduce the leaching of nitrate from dry sandsoils, since the objectives set in this Directive cannot be met by the current Dutch legislation.

4. STRATEGIC LINES

The social and political processes set out in the previous paragraph have a strong effect on the environmental policy for the Dutch agricultural sector. This is a field where the call for regional differentiation grows louder, just as the call for more influence on the objectives and means to get there.

In the past few years, ideas about how to develop environmental policies have changed considerably. This resulted in a new way of working, that combines two main elements: 'external integration' and 'selfregulation'. At the basis of these two concepts are the growing environmental awareness and the call for more scope to adapt rules and regulations to specific situations, as described above. Integral approaches and the use of new market opportunities are essential.

'External integration' basically means integrating environmental issues into the policies of other 'parties', both on the side of the government and the agricultural sector, and making them take the responsibility to provide for the quality of the environment. In order to do that, they will need the opportunity to 'regulate themselves', finding ways to fit environmental issues into daily routines and regulations. The best way to do this is to involve all parties concerned in an early stage, so the policy can be develop as a kind of co-production.

The parties involved usually include, apart from the Ministry of the Environment, several other ministries like the Ministry of Agriculture, Nature Management and Fisheries and the Ministry of Transport, Public Works and Watermanagement. Local and provincial authorities, water boards and the like are the ones responsible for granting the permits, making local plans or maintaining a certain environmental quality standard. They want to be included so they have the possibility to adapt rules to the local situation, asking for extra measures when necessary and the option to be more lenient when possible.

The agricultural sector will have to deal with the objectives and regulations, and find a way to fit them into the way they run their business.

To ensure a balance between economical and environmental interests, environmental pressure-groups are more and more invited to take part in this process.

In such a system of policy-development by co-production, the role of the Ministry of the

Environment will change. Instead of initiating and developing environmental policies, the Ministry has to participate, facilitate and stage-manage the process if necessary. The Ministry has to take care of the formulation of clear agreements on measurable results, and of the monitoring and evaluation of the environmental results. In the perspective of the market-orientation, the awareness and use of the total chain of production from producer to consumer may be stimulated by instruments like an environmental certificate, and agreements between agricultural organizations and environmental pressure groups or consumer-organizations.

The development of a policy on an international scale will also be the responsibility of the central government.

5. TWO CASES

To give a good idea of how an open process might work and what the results can be, two short cases will be presented.

First, the voluntary agreement with the glasshouse horticulture-branch, where the process until now has been very successful.

Second, the policy on pesticides. This is an example with a different character, since the process so far has not been an entirely open one. It did however contain certain elements of co-production. Here an agreement with the sector has lead to certain results, but the objectives for 2000 will not be met. Additional measures are necessary and it's not clear yet if negotiations on these measures will be successful.

Covenant glasshouse horticulture-branch

For the past two years municipal, provincial and national government, water boards, agricultural and environmental organizations have been working on a covenant for the glasshouse horticulture-branch.

The first initiatives for this covenant came from the branch itself. They found themselves confronted with an increasing amount of environmental legislation and environmental targets they could not fit into their individual conduct of business. Instead of general

legislation, they wanted a tailor-made system that would suit individual companies.
The authorities on the other hand had to deal with a sector that causes a high level of environmental pollution and a set of rules that was difficult to enforce. Together they've tried to improve the system of environmental legislation for this particular sector in such a way that both environment and sector will benefit.
At the basis of the system stands a set of 'Integral Environmental Targets' (IET), to be met in 2010. Covering issues ranging from pesticides and water management to light-pollution and the use of energy, these are the targets that have to be met by the sector as a whole. How they are going to do that is more or less up to them; the government does not dictate any specific environmental measures that have to be taken, unless there's really no other option. This IET will then be translated into targets for individual farmers, based upon their individual circumstances and the crop they grow. Farmers who choose to take part in this system make a Company Environmental Plan (CEP). In this CEP the farmer sets out what measures he is going to take to tackle the different environmental problems in his own company, and the results these measures will have on the amount of environmental pollution. The CEP forms the basis for the company's environmental permit. Results have to be monitored, and the farmer has to report these results to the authorities. Some environmental problems will be easier to improve on in his particular company than others. He will have to produce results on all environmental issues, but can make up for small results at one issue with better results on another one. If it turns out he does not reach his personal targets, the CEP will have to be adjusted. This system enables farmers to concentrate on their own strong points, and to fit environmental measures into their business-planning. It also links up with quality-control systems already used by the sector, reducing the amount of paperwork for both farmer and government and enabling the farmers to promote themselves as environmental-friendly.
There are still some juridical discussions going on about how to fit this system into the existing legislation. Only a few years ago a system had been set up with general rules for the entire sector. These rules might not be ideal, but neither is a system of individual permits for every company. This brings high costs for both local authorities and farmers, not to mention the amount of paperwork.

The idea right now is to apply the general rules, unless a farmer indicates he wants a more tailor-made approach; in that case he can make a CEP, and apply for a permit. The general rules will function as a safe-guard, to make sure the targets will be met even if the system would not work out.

Pesticides

From the 1950's onward, the use of pesticides has greatly increased all over the world. Thanks to chemical pest control, the Dutch crop cultures had become more intensive and consequently more susceptible to pests and diseases. As a result, Dutch agriculture became highly dependent on pesticides. In the second half of the 1980's, an average of 10 kg of pesticides per hectare was used. Some substances were starting to loose there efficacy, and resistance problems were increasing.

The necessity of an active restrictive policy became even more evident when in the second half of the 1980's traces of pesticides were found in drinking-water. All of a sudden, pesticides became an issue of public concern and was raised on the political agenda.

This resulted in the joint development of a new pesticides policy by the ministries of Agriculture, Nature Management and Fisheries; Housing, Spatial Planning and the Environment; Welfare, Health and Cultural Affairs; Social Affairs and Employment, while the ministry of Transport, Public Works and Water Management was involved when necessary. They aimed to develop a policy that would take both socio-economic and environmental factors into account. This resulted in the Multi-Year Crop Protection Plan.

The main objectives of this plan were the reduction of the dependence on pesticides, a reduction of the use of pesticides with 50% and of pesticide- emissions to air of 50%, to soil and groundwater of 75% and to surface-water of 90% by the year 2000, with interim targets for the year 1995. On top of that authorization of the most harmful products would have to be withdrawn.

The Multi-Year Crop Protection Plan was sanctioned by Parliament in 1991, and by 1993 the government and agribusiness concluded a management agreement on the execution of this plan. With this agreement, the agricultural sector subscribed to the

objectives and targets set out in the plan, and to an active contribution to various implementation activities.

In 1996, the results were evaluated for the first time, and - as mentioned before - at first glance the policy seemed successful. A closer evaluation, however, showed that the objectives set for 1995 were not met at all, and that it would not be likely that current measures were enough to reach the objectives set for 2000. It is clear that extra measures will have to be taken to improve on these results, either by the agricultural sector or - if they will not or cannot do that - by the government. At this moment, the sector has promised to work out new initiatives. If they appear not to be satisfying, the central government will take it's own responsibility. Regulations and / or financial instruments may be considered.

An effective national solution is complicated by a number of factors, particularly in the area of reducing the range of authorized substances. One of the main objectives of the Crops Protection Plan is to reduce the dependence on pesticides. In order to do that it is essential that the farmer has a wide range of substances to choose from, so he can solve emergencies with as little use of chemicals as possible. The criteria used in the authorization process, however, are rather strict and will lead to a range of authorized substances that is too small to meet this objective.

Plant diseases and pests are transboundary, spreading both actively and passively. Passive spread has strongly increased as a result of international trade in agricultural products. Strict national legislation is not only ineffective in this field, it also influences the competitive position of the Dutch farmers. Considering the disparities among the EU member states in climate, production conditions and environmental requirements, international legislation does not seem to be forthcoming in the near future. To accelerate this process an active role in the EU is necessary.

FUTURE OUTLOOK

Despite all the rules and regulations set for the agricultural sector in The Netherlands, solving the environmental problems caused by this sector turned out to be rather difficult

in the past years. The strategic lines set out in the previous paragraphs might be a solution, if these lines are continued and improved in the future.

Integration of environmental values in the policies of other Ministries and local authorities will have to be stimulated even more. Selfregulation, as worked out for the glasshouse horticulture-branch, should be extended to other branches where it might have a good chance to solve the problems, like the dairy-farming branch. The continuing market orientation and growing focus on the total chain of production could be used, and environmental agreements between the agricultural sector and environmental organizations should be fostered. Instruments like an environmental certification system deserve more attention. The same holds true for the us of financial instruments like levies.

Environmental issues will have to be tackled on a larger scale, both national and international, in connection with policies on spatial planning, renovation of the countryside and reorganization of the agricultural sector.

REFERENCES

Along with a certain amount of non-published information, the following documents have been used in composing this paper:

1. RIVM, "Milieubalans 1996. Het Nederlands milieu verklaard", Alphen ad Rijn, 1996
2. Ministry of Agriculture, Nature Management and Fisheries, "Policy document on manure and ammonia", The Hague, 1995
3. Ministry of Agriculture, Nature Management and Fisheries, "Environmental policies in agriculture in The Netherlands. Nutrients and pesticides", The Hague, 1993
4. Ministry of Agriculture, Nature Management and Fisheries, "Essentials: Multi-Year Crop Protection Plan", The Hague, 1990
5. Ministry of Housing, Spatial Planning and the Environment, "The Netherlands' national environmental policy plan 2", The Hague, 1994