

THE AGRICULTURAL ENVIRONMENT IN THE EUROPEAN COMMUNITY
(version 14 Januari 1987)

C.T. DE WIT

DEPARTMENT OF THEORETICAL PRODUCTION ECOLOGY
WAGENINGEN AGRICULTURAL UNIVERSITY

THE NETHERLANDS

Summary

The interrelation between agriculture and the environment is treated within the economic frame work of the Common Agricultural Policy of the European Community. For this purpose, the development of the CAP and some political and technical aspects that should be taken into account in further policy making are discussed and the goals of the CAP are reconsidered. It is then analysed to what extent a policy that combines an increased market orientation with an increased solidarity with the agriculturally less endowed regions, may form a basis to reconcile agricultural and environmental demands.

*4th International Ecology Symposium
Ecological implications of contemporary agriculture
Wageningen 8-12 September 1986*

Introduction

Past and present changes in farm management and techniques have a major impact on the environment in the European Community, be it only because two-third of the the land is used for agricultural purposes. According to a summarizing report of Tracy(1985) the main problems under discussion are:

- problems stemming from the use of chemicals in agriculture. These relate particularly to the pollution of the environment in general and the ground and surface waters in particular by minerals, nitrogen and biocides. The result is damage to flora and fauna and to public health;
- problems stemming from intensive life stock farming, such as the conditions in which animals are housed and treated, the stench created in the vicinity and the emission of ammonia in the atmosphere which may contribute significantly to air pollution. A major problem in certain regions is also the over-production of animal wastes and its subsequent dumping in too large quantities on too small areas;
- problems arising from large scale farming and structural changes such as drainage, the filling in or re-alignment of ditches, building and metalling of rural roads and land improvement. The result is change in cherished historical landscape, a loss of diversity and again damage to flora and fauna.

The nature of the environmental problems vary from regions to region. However, the problems referred to above and the problems in discussion at this symposium are primary those of the Northern EC countries and arise as it were from affluence. In Southern countries of the EC environmental problems are much more a matter of over-exploitation and of physical and chemical erosion, resulting from poverty. This gulf between Northern and Southern countries was revealed at this symposium by the practical absence of ecologists and agriculturalists out of Southern countries and by the problems that were discussed.

Had the level of price-support been lower then it had been under the EC agricultural policy, the agricultural expansion would have been less and many of the structural changes with their intensification of environmental problems would not have occurred in the present form. The bulk of the changes are, however, irreversible so that a restrictive price policy alone would not alleviate the environmental problems, although it would reduce the

pressure on land improvements. The reverse could even apply in numerous marginal regions in Europa where farming is vital for the integrity of the social structure and for preserving the landscape and the environment. It is precisely in these areas that price pressure would produce changes in agriculture where it would be unable to fulfil these functions.

Therefore the interrelation between agriculture and the environment has to be considered within the economic framework of the Common Agricultural Policy (CAP) of the European Community (EC). For this purpose, the development of the CAP and some political and technical aspects that should be taken into account in further policy making are treated and the goals of the CAP are reconsidered. It is then analysed to what extent a policy that combines an increased market orientation with an increased solidarity may form a basis to reconcile agricultural and environmental demands.

This paper stands not alone, but elaborates upon a paper in Agricultural Systems (De Wit et al, 1987), a report of the Netherlands Scientific Council for Government Policy on the unfinished European integration (WRR, 1985) and on studies on integrated agriculture (Van der Weijden, 1985) and on the Agricultural policy beyond the watershed of self-sufficiency (Meester and Strijker, 1985), both in the Dutch context and on behalf of this Council.

The Common Agricultural Policy

The CAP of the EC was initiated more than 25 years ago at a time that the import of agricultural products was considerably larger than the export and food security for the still increasing millions of Europeans was not ensured. The purposes of the CAP were the increase of self-sufficiency and food security, a fair income for the farmers and maintenance of equilibrium on the markets of agricultural products. The main policy instruments of the EC were and are still levies on the borders of the EC and intervention prices for some of the main products as sugar, milk, wheat, wine and olives.

The existence of mountains and lakes of agricultural products show that farmers' income and food security have been higher on the priority list than market equilibrium. However, the waste of scarce resources for the production of these surpluses is a too high price, because its spin offs, like employment and income for the farmer can and should be achieved without this.

The overproduction reflects that the internal EC market for food products is to a large extent saturated. Expansions in some of the markets, are likely to be offset by contractions on others, with the exception of more

exquisite food products and ornamental products for house, gardens and parks. There is now a considerable export of products for which intervention prices are being maintained, so that at the EC borders the difference between internal and world market price is not any more collected as a levy, but paid out as an export restitution. The very success of its policy has brought therefore the EC in considerable budgetary problems. Moreover, it confirmed the voting, urban consumer in its opinion that he is paying too much for his food. There are still large imports of grain substitutes for animal use, vegetable oils and fats for margarine and cellulose products for paper. This would certainly be otherwise, if there had been also protecting import levies for these commodities at the EC border. In that case the growth of intensive live stock farming in the Netherlands would have been less and the Dutch would have been using their own butter instead of margarine.

From the beginning, the EC was given the responsibility for the price and market policy, but the national governments remained responsible for the structural policies of farm improvement and of reallocation, reclamation and reconstruction of the land. The prices have been maintained on such a high level that viewed from the national standpoint these structural improvements paid their way in spite of overproduction. Therefore, this divided responsibility has been contributing considerably to the present problems.

Policy limits

Although the CAP has served its original purpose very well, the economic and environmental problems are now so profound, that the need for a major overhaul is widely acknowledged. The policy choices are, however, severely restricted by limits that are imposed by the economic and political situation, by the nature of the agricultural production process and the conflicting goals that have to be served. Some of these limits were already mentioned in the previous paragraphs, but these and others require further elaboration.

The agricultural markets in Europe will remain practically saturated. Admittedly there are still considerable imports of vegetable fats and animal feeds, but the implementation of levies or restrictive import quota on these products with the purpose to increase their internal supply must be considered impossible, because of its political repercussions on the international trade relations. It should be taken into account also that these imports, although large in terms of tonnage, are equivalent to less than 5 years of production increase in the Community. Hence, only a few years of grace would be

bought at the expense of considerable international strain.

Unfortunately, a detailed, comparative analyses of the possibilities for production increase in the various agricultural regions of the European countries is not available. However, an analyses in a more world wide context(Buringh et al, 1975) have shown that in all parts of Europe there is still considerable leeway for further increases of the soil productivity and that the knowledge base to do so is already available. Hence market saturation is not complemented by saturation of production possibilities.

The most straightforward way to adjust production to demand seems to be a downward adjustment of intervention prices. This would at the expense of price supported commodities, encourage the growth of other and new crops, make imports of vegetable fats and animal feeds less competitive and stimulate to some extent the final demand. Because a large degree of self-sufficiency in agricultural products will remain an important goal of the CAP, the prices have to be maintained at such an level above the erratic prices on the world market that there is an economic base for this production.

However, in any situation where a crop can be economically grown, the yields per hectare continues to increase at about the same rate, independent of major differences in productivity of labour and soil, production costs and market possibilities. This important conclusion can be drawn from a regional analyses by Meester and Strijker(1985) of the dynamics of the soil productivity since 1950 in nine states of the EC. They found for this period, that the procentual increase in production in the regions with low yields had been higher than in the regions with high yields, but that measured in absolute terms of kg per hectare or per cow per year the production increases were much more the same and that in none of the regions, this increase appears to slacken.

A partial explanation for this remarkable phenomenon, is that innovative yield increases may require often more of some inputs per unit surface, but at the same time they require less of most inputs per unit product. Innovations that lead to yield increases are therefore advantageous under practically all economic regimes and price structures. Environmentally, the advantages of the use of less inputs per unit product have to be weighted against the disadvantage of using more inputs per unit surface. That less inputs per unit product are needed, is obviously so for fixed inputs, like the amount of seeds. It is therefore important to note that the number of fixed inputs increase at the expense of the variable inputs with increasing yields. For example, to achieve moderate yields, the pH has to be adjusted around five, but to

achieve high yields further adjustment is not necessary. This holds also for phosphate and the need for weed control may even diminish with increasing yields, because of the ecological control by the better growing crop. Apart from this it should be taken into account that the agricultural production process is least understood and therefore most difficult to manage in low yielding situations where many and partly unknown limiting processes may exert their adverse influence. This leads to inefficiencies which can be avoided under higher yielding conditions where growth is more controlled, so that the supply of inputs can be much better adjusted to the demand.

A similar situation exists for animal production: wherever animal production is economically feasible, the yield per animal also continues to increase by putting new knowledge to good use. A good example is the propagated use of natural hormones, which promises yield increases per animal of about 20 percent and therefore a comparative decrease of all maintenance costs.

The consequences for the CAP of this phenomenon of continuing yield increases are large, as may be illustrated by a simple calculation. The yields in Europe appear to increase with an average rate of roughly 70 Kg grain equivalents per hectare per year. This increase in all regions that remain in production has to be balanced by forcing in some way or another land out of production. If these are soils with the average yield of about 4000 Kg grain equivalents per hectare, this amounts to 1.75 percent per year or 25 percent before the year 2000. Without taking into account the existing overproduction, this amounts to about 20 million hectares in the Europe of the twelve countries. However, the 30 percent of the agricultural land in the less endowed regions yields only about 10 percent of the total production and if this is mainly taken out of production the affected area is almost doubled. On the other hand, 10 percent of the land in well endowed regions produce 30 percent of the production and this may be an argument to shift the burden of production control into that direction.

Even a bird's eye view of Europe reveals that the better and less endowed regions are not only unevenly distributed within countries, but also between the countries of the European Community. Any CAP that seeks to adjust agricultural demand and supply by drastic downward price adaptation will therefore get entangled in the political discussion where and how to take land out of regular production while maintaining sufficient economic equity and environmental integrity.

Another possibility to adjust production to demand is the use of production quotas for price-supported commodities. This does not present a fundamental break

with existing policies. Therefore fundamental conflicts between member states with weak and strong agricultural sectors can be avoided. However the existence of quota would not affect the continuing rise in yield per hectare and corresponding fall in cost price, so that the permitted quantities will be cultivated on a decreasing area. The surplus acreage would then become available for the cultivation of crops not subject to quantitative restrictions. Once again, this would be done most economically in the central regions. Unless quota would be imposed also on these crops, their production would cease in marginal areas, taking the protected crops in their train. But even an extension of the quota system to all agricultural produce would not prevent the production increase per hectare, so that also in this way the Community becomes in due course entangled in the political discussion where and how to take land out of regular production while maintaining sufficient economic equity and environmental integrity.

Towards more market conformity and solidarity.

There are no simple policies to elivate the agricultural problems, be it only because several aims have to be served by them in order to be workable and acceptable for all member states. Apart from original goals of production and income, these are:

- restoration and maintainance of an equilibrium between supply and demand under conditions of rising agricultural productivity and saturation of demand;
- substantial contribution to reduction in geographical disparities in prosperity and growth prospects;
- maintainance of agriculture in little endowed regions in order to preserve the landscape and to contribute to nature conservation;
- releasing of the EC budget and the recognition of the demand for lower prices by the consumer.

If the price instrument is directed towards a better adjustment of supply and demand this drain on the Community budget is blocked and consumer demands are met. However, the price to be paid in the less densely populated and economically backward rural areas of the EC would be too large. There it would be impossible to maintain the level of agricultural activity, that is necessary for the continued viability of centres of population and for the preservation of the landscape and the natural environment. The abandonment of the policy of income supporting prices as an instrument for the

maintenance of agriculture in little endowed regions has therefore to be compensated for by other measures. These may be much more effective and cheaper than non-discriminating price supports because they permit a greater differentiation in income levels and regional development potential. The present policy of price support works far too much to the advantage of the large farmer with high yields to qualify as an equitable instrument of redistribution of income. An inevitable consequence of a more market oriented agricultural price policy coupled with structural support for marginal agricultural region is that the burden for the restoration of the CAP comes to bear mainly on the economically strong regions. Which is where they should be borne, since they are going to profit most directly from the future potential of the common European market.

Well endowed regions

The well endowed regions in Europe, both agricultural and otherwise, are for a large part located around the axis London-Milano in East Anglia, Denmark, the Netherlands, the Paris Basin, the central and North Western regions of the German Federal Republic and the Po Valley in Italy.

If the production decrease in the less endowed regions is mitigated, this production decrease has to take place in these well endowed regions. As has been said, one of the instruments would be a considerable reduction of intervention prices. Since the level of support is at present high enough to keep small farmers in less endowed regions in business, this reduction is in principle justified for farmers in well endowed regions. However, these farmers have based their operations and investments on the present high price levels, so that sudden price decreases would confront them with insurmountable problems. A gradual decrease means, however, that the existing quota arrangements such as those for milk and sugar would need to be continued for quite some time. This will impose a major burden on the decision-making capacity of the Community.

For milk, a gradual reduction in the quota together with a lowering of the intervention prices would clear the way for the quota system to be replaced by a temporarily system of socially-oriented income support for small farmers. For cereals, the transition to lower prices could perhaps be cushioned by co-responsibility levies. These have the advantage that they keep the transfer of money from the consumer to the agricultural sector intact. In practice these levies might take the form of a regionally differentiated levy per hectare cultivated with cereals. Another option is to confine such a levy to the grain

brought on the market to stimulate forms of mixed farming in the cereal-producing areas of the Community. This would then be at the expense of intensive livestock farming on the more marginal sandy areas in the Netherlands, Belgium and parts of the German Federal Republic. Here restraints are anyhow needed because the build-up and dumping of animal wastes has unacceptable environmental consequences.

The proceeds of co-responsibility levies on surplus products should not be used to promote their export against rock bottom prices, but are better used to prevent their production. With some additional money from other EC sources, these proceeds could be channeled to a diversification fund to promote the growth of crops that do not contribute to overproduction. A main drawback of the present support system is that it discourages the farmer to grow a wider variety of crops and the research establishment to work on the improvement of these crops.

The advantage of using land for other crops is that it may relieve the crop rotation problems that occur in many regions. These can hardly be underestimated. The present narrow crop rotations invite management practices that damage the soil structure and lead to the build up of pests, diseases and weeds. These are often chemically controlled, which in turn creates serious risk for environment and public health. For instance, the control of nematodes in potatoes requires more than half of all pesticides that are used in the Netherlands and the growing problem of rhizomania in sugarbeets can at present only be evaded by not growing the crop at all on infested soils. Alternate crops might include green manures, fodder crops, fibre and oil crops, beans and peas, vegetable crops, fruits, nuts, and industrial and pharmaceutical crops. The cultivation of energy crops on a commercial scale is for a considerable time in the future not attractive, but with a view of avoiding the high taxes and excises on energy, farmers could perhaps do more about generating their own energy requirements.

Many alternate crops are suggested, but it does not seem likely that any of them will play such a dominant role, that the surplus problem of 20 million hectare by the year 2000 will be resolved in this way. It remains therefore necessary to find ways and means to take also land out of permanent production in well endowed regions. Economic wisdom has it that lower commodity prices would sooner or later lead to lower soil rents and soil prices. This should be of some help. However, it is difficult to generalize, since in some countries and regions, these lower prices have been materialized already, whereas in other regions the demand for land may remain high for some time to come because production rights are attached to it. Nevertheless, some of the good quality land may become cheap enough to promote commercial forestry. This could be

more attractive than the present attempts to reforestate poor soils. Moreover, commercial forestry in the central and densely populated areas of the Community could be readily combined with mass-recreational facilities.

The establishment of semi-nature reserves on soils that have been in use for agricultural production or are suitable for that purpose appears also very well possible. Taking into account the large pressure of human activities on the natural environment in the central regions, there is a pressing need for ecological refuges and corridors. Finally, cheaper land would make it easier to set aside more of it for the enhancement of landscape features and environmental diversity.

None of the changes in land use will come cheap, but on the other hand there are no arguments to shift all of the burden on the agricultural sector, who will have already to adjust the consequences of lower prices. This adjustment has to lead either to larger, more mechanised and automated farms or to family farms with outside sources of income. This may work out differently in different countries. It may be that in Bayern, the female member of the household is burdened with much of the tedious work at the farm and around the house, but it may also very well be envisaged that the male member of the two-income farm family works alone and only on the farm, whereas the female member continues to work in her former professional capacity.

Whatever the outcome, the farmer will remain a busy man, but even then he may contribute to the integrity of the environment by integrating conservation management with farm husbandry, without much extra costs. It is a happy development that at present all over Europe, agriculturists, conservationists and environmentalists band together with farmers to develop practical ways and means to do so. Some of these are considered in recent publications on behalf of the Council for Protection for Rural England, the German Council of Experts on Environmental Problems and the Netherlands Scientific Council for Government Policy, whereas others are worked out by governmental research agencies and by innovative consultant bureaus like the Tuttensor Consultancy in England, the "Centrum voor Landbouw en Milieu" in Utrecht in The Netherlands and the "Association Aménagement Environnement" in Lille in France. Therefore it suffices here to present some examples.

There appears no extra costs or time involved in maintaining the farmyard and its buildings as a valuable conservation area for lichens, mosses, bees, swallows and so on, whereas the natural value of tracks, lanes and ditches can be enhanced by changes in management that are directed towards chemical impoverishment and less frequent mowing. A well propagated program for inventive management

of the many litugate elements in the landscape has contributed considerably to species diversity in the Netherlands. Many arable fields and leys have margins which can also contribute to the survival of now rare weeds and wild flowers by keeping them carefully free of fertilizers and biocides. This may require some extra work, but the costs may be recouped by savings on fertilizer and biocides. Many farms contain also small and seemingly unimportant habitats that can provide considerable conservation value. It may need only slight changes in agricultural practices to maintain them at no extra financial or labour costs. This holds as well for the maintainance of hedge rows, although it should be recognized that they may hamper indeed mechanised operations. Otherwise, the agricultural beneficial and harmful effects are so balanced, that the hedge row discussion will be with us for at least another generation.

Nitrogen fertilizers form a serious environmental hazard. Their use in rotational grazing systems in the Netherlands has gradually increased towards 500 kg N/ha/year, much of it being lost in the process. Nitrogen in these amounts is not so much needed to maintain optimal growth of close grass swards, but for a rapid recovery of the sward after sharp grazing. There is at present a renewed interest in continuous grazing systems in England and the Netherlands (Lantinga, 1985). With these, the sward is kept always closed and then considerable less nitrogen is needed to obtain the same animal production throughout the year than with rotational grazing. For the same reason, it appears possible to save on additional sprinkler irrigation. Over-fertilisation of arable crops contributes considerable to leaching of nitrogen in late summer and autumn. It has been shown that much of this can be prevented by growing catch crops (Duynisveld in these proceedings). Another possibility is a good adjustment of the nitrogen fertilization to the needs of the crop, but this requires costly nitrogen analyses of soil and crop.

Nitrogen fertilizer would have to be much more expensive than the present all time low to reduce its use so much that yields are seriously affected. Hence there is sufficient scope for an environmental tax on its use, which is one hand high enough to reduce wastage of N in inorganic and organic form to a considerable extent and on the other hand low enough to avoid inefficient use of fixed inputs due to yield reductions. The proceeds of such a tax could very well be used for further damage control. Such a price increase to control excessive use of nitrogen was proposed in the German Federal Republic by the Environmental Council (Rat Umweltfragen, 1985). However, their suggestion to reimburse the farmers on a per hectare basis for this taxation leads to unnecessary

complications, as long as prices in the EC are maintained at such a level that demands on the home market are satisfied.

The use of biocides for control of insect, diseases and weeds is another environmental hazard. It has been shown that application schemes in which their use is guided by expected damage leads to considerable less use of biocides. Such schemes have been developed and used for wheat in the Netherlands since the middle of the seventies and this is an important reason why the number of sprayings is only 2.5 on the average, compared with 8.5 in England and 7 in the North West of the German Federal Republic (Rabbinge, 1987). Taxation schemes to reduce wastage and promote efficient use of biocides are again worth considering.

The environmental and nature conservancy problems may be large, but they would be much larger and totally unresolvable, if agriculture should be so unproductive, that it would need all the available land to meet the demand for food. As it is, agriculture cannot do without agricultural chemicals to meet this demand, but research and development directed towards a responsible and careful use of these potential environmental hazards can do much to reconcile agricultural and environmental needs. However disturbing chemical contamination may be, in the long run the continuity of agriculture is much more threatened by creeping sheet and wind erosion which is in any soil based agricultural system, be it traditional, organic or industrial, at least an order of magnitude larger than the single ton per hectare that is each year added to the soil profile by weathering. A systematic soil erosion survey within the European Community, as recommended by the German Environmental Council is therefore urgently needed.

Little endowed regions

Little endowed regions, both agricultural and otherwise, in the Europe of the nine are located in the West and North West of Ireland, throughout Scotland, the North of Wales, in the South East of the German Federal Republic, in the Vosges, the Jura, the massif Central, the Pyrenees and the Alps of France and along the axis of the Apennines and on the islands of Italy. Many regions in the three new EC countries, Greece, Spain and Portugal, have to be classified also as agriculturally little endowed.

The central problem in many of these regions is summarized in the fact that in spite of a weak natural resource base up to thirty percent of the population may be engaged in agriculture, whereas this is less than 10 percent in well endowed regions. Any policy that is directed towards maintaining this situation, would be

economically futile and socially discouraging. It would be also politically hazardous, because of its dependence on the lasting willingness of the more prosperous regions in the EC to pay the bill. Therefore it is necessary to place the problem of little endowed regions within a broader context than agriculture alone, by aiming at a social and economic structures that compliment and partially replace traditional agricultural structures. Combined community and country programs for improvement of the infra structure to bring industries and services, for the regional creation of non-farm jobs, for education and for the promotion of mobility are more likely avenues to alleviate the problems than continuing agricultural price supports. Experience in the South East of the German Federal Republic shows that diffuse development of industrial activities and services create possibilities for agriculture as a complementary source of employment or even a leisure pursuit. In the so-called integrated programs that are being prepared by the Community for especially the Mediterranean regions, the industrial and services sector will also need considerable attention.

Within such a wider developmental frame work, there are good reasons for directing public support to agriculture in such a way that environmental goals are served as well. It is true that damage to the natural environment is intrinsic to productive farming, but this being said, it is generally agreed upon that continued farming of traditional farming country, is a necessary condition to maintain its environmental value. Some conservationists believe that a prosperous rural life is even a sufficient condition, but too many examples show that this is overly optimistic. Hence there are good reasons for directing public support to little endowed regions in such a way that environmental goals are served as well. This is done mostly by paying the farmer for the execution of measures that are supposed to maintain the landscape and the ecological refuge functions of the farm. These directives push the farmer often in the direction of traditional farming, because these are assumed to serve these functions.

This may have been the case in the past, but so many irreversible changes have occurred, even in marginal areas, that this is not necessarily so at present. Some regions have been affected by drainage, some by enrichment with minerals and all of them are affected by the consequences of air pollution. And even if traditional methods are friendly to the environment, they may be hard to the farmer who has to execute this often heavy and tedious work.

Another approach which is much more in line with the ideas of integrating agriculture and its environment is to define and quantify the ultimate aims that are envisaged

and to remunerate the farmer according to his success in reaching them by his own ways and means. In this way ecologists are stimulated to think in dynamic rather than in static terms and the farmers and their advisers challenged to develop innovative methods to serve lasting values. If hedgerows or hill pastures are precious elements in the landscape and worthy ecological refuges, it is reasonable to pay the farmer in less endowed regions according to quantity and quality. If diversity is a worthy ecological goal, why should the farmer not be paid for the number of species or for the habitats he is able to create. The Act on the Interrelations between Agriculture and its Environment in the Netherlands and the EC program of compensation payments for hill farming go already in this direction, and the controversial Wildlife and Countryside Act in Great Britain could possibly be bent to do so.

It would go too far to pay the farmer for not contaminating the aquifer he is living on with nitrate or his surroundings with biocides. But instead of to deal with a difficult enforcable and therefore problematic prohibition on the use of agricultural chemicals, it would be far more challenging to develop technical packages that fine tune their application and to subsidize their use in these little endowed regions. These innovative techniques could then fan out to central agricultural regions, but then without subsidy.

It is suggested that farmers in these marginal regions should be better off by growing crops that do not contribute to the surplus production. Too little it is then taken into account that soils that are marginal for surplus crops are in general also marginal for others, so that it remains impossible to compete with better endowed regions. For this reason differential payments out of the earlier mentioned diversification fund in favour of the less endowed regions may be justified.

There may be a growing market in an affluent, urban Europe for special products that distinguish themselves for all practical purposes only from similar products by either their origin or the way they are grown and are thus shielded from competition out of well endowed regions. Examples are some wines and cheeses, fish, game and other special meats and natural foods and craft products. A comprehensive system of protected Community marks of origin and trade names would strengthen the market position of such specialities in the interests of both consumer and producer.

Any policy of adapting supply better to demand will be frustrated by further reclamation and land improvement schemes that are prompted by national interests and mainly financed out of public funds. As for other sectors of the economy, such competition distortions should be reported

to the EC commission which could then control the plans in accordance with its own policy. Because of equity reasons, some public supported improvement schemes may be permitted in Ireland and the new member countries which joined the EC to late to develop some of their potentials. However, reclamation of new polders in The Netherlands and the further drainage and reclamation of ecological valuable wetlands in France and some other countries should come to an end.

Especially in outlying regions without much infrastructure any form of intensive agriculture will vanish. The land may then often be made available to semi-public organisations for the creation of ecological refuges, semi-natural reserves, aforestation, leasure parks and extensive grazing by domestic animals or game. These forms of land use may change the landscape beyond recognition. They have also in common that very little employment is created. Therefore social programs are needed that enable the elder part of the population to survive with dignity and the younger part to move along.

Aforestation requires considerable initial investment with a guaranteed low return on marginal and poor soils and game exploitation requires a good market organisation for the hunting rights and the meat. The profitability of extensive uses may be often overestimated and the costs of reconstruction underestimated, so that much of the marginal land that will be deserted anyhow will be left to run wild or to waste.

Some aspects of allocation and financing

Compensatory geographical redistribution in favour of less endowed regions would create substantial allocation problems, because even the most favoured regions have their weak agricultural pockets. These regions have to solve their own problems and should not siphon resources away from the outlying regions where the quantitative and qualitative problems are the greatest. In this respect it is disturbing that the German Federal Republic claimed that 50 percent of its agricultural land is to such an extent marginal that it would require EC support and this the more so because this claim was recognized on the EC level.

Another allocation problem concerns the great diversity of regions that would qualify for compensatory support, which makes a single Community policy for all regions impossible. It will therefore be necessary to develop an arsenal of potential intervention instruments at Community level, whereupon the the EC Commission and agencies of the Member States could draw upon some packages of measures appropriate to each region. Their selective application and the degree of EC financing would constitute a gradual

transition between well and less endowed regions. It is, however, most disturbing that there is not much of an ecological lobby in Brussels that has the capacity to strengthen the ecological and environmental components of such packages and support their use.

The main purpose of reducing support prices is to lessen the waste of scarce resources, to mitigate the burden of the CAP on the EC budget and to enable more discriminate economic, social and environmental policies. Because without further measures, the consumer is the only direct beneficiary of decreasing prices there are good arguments to split the windfall between the consumer and the EC. Since agricultural policy objectives are at issue, the EC Treaty would not prevent a levy or a special surcharge on the value added tax on agricultural products for the purpose. The proceeds of such a tax could very well approach the present EC expenditures on agricultural policy and come a long way to fund the structural changes as discussed in this paper, without crowding out other activities of the EC.

References

Buringh P., H.D.J. van Heemst and G.J. Staringh (1975). *Computation of the absolute maximum food production for the world*. Landbouwhogeschool, Wageningen, the Netherlands.

De Wit, C.T., H. Huisman and R. Rabbinge (1987). *Agriculture and its environment: are there other ways?* Agricultural Systems, 1987 (in press).

Lantinga, E.A. (1985). *Productivity of grassland under continuous and rotational grazing*. PhD thesis Wageningen Agricultural University.

Meester, G. and D. Strijker (1985). *Het Europese landbouwbeleid voorbij de scheidslijn van zelfvoorziening*. Voorstudie WRR, V 46, Staatsuitgeverij, 's Gravenhage, The Netherlands.

Rabbinge, R. (1987). *Implementation of integrated crop protection*. Bulletin of the International Organisation for Crop Protection (IOBC) (in press).

Rat Umweltfragen (1985). *Umweltprobleme der Landwirtschaft*. Der Rat von Sachverständigen für Umweltfragen. Kolhammer GMBH, Stuttgart and Mainz, FRG.

Tittensor, R. and A. (1986). *Nature conservation for busy farmers*. Tittensor Consultancy, Walberton, Arundel, Sussex

Tracy, M. (1985). *Agricultural Policy and the Environment*. Report of a panel of experts, Maastricht, European Institute of Public Administration, The Netherlands.

Van der Weijden, W.J. and others (1984). *Bouwstenen voor een geïntegreerde landbouw*. Voorstudie van de WRR, V44, Staatsuitgeverij, 's Gravenhage, The Netherlands (English summary: "Building blocks for an integrated agriculture", available on request at WRR, POB. 20004, 's Gravenhage).

WRR (1986). *The uncompleted integration in Europe*. Rapport Nr. 28 (English translation) van de WRR, Staatsdrukkerij, 's Gravenhage, The Netherlands.

