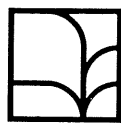


Environmental policy in a market economy

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ENVIRONMENTAL IMPACT OF THE COMMON AGRICULTURAL POLICY

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I. Environmental Problems

Some thirty years ago there was considerable doubt whether sufficient food could be grown in the European Community (EC) to meet the increasing demand, so that food supply and farmers' incomes were much higher on the priority list of the godfathers of the Common Agricultural Policy (CAP) than prices and market equilibrium. However, the technological development has ever since continued at such a rate that this policy has become a victim of its own success, resulting in the much discussed economic problems of market saturation, overproduction and an overloaded EC budget, and the social problems of decreasing employment and increasing marginalisation of less-endowed agricultural regions.

Changes in farm management and agricultural techniques also had a major impact on the environment in the European Community, if only because two-thirds of the land is used for agricultural purposes. Some of the main problems under discussion are (Tracy, 1985):

- problems stemming from the use of chemicals in agriculture. These relate to the pollution of the environment in general and of ground and surface water in particular by minerals, nitrogen and biocides. The results are damage to flora and fauna, and hazards to health;
- problems stemming from intensive livestock farming such as the conditions in which the animals are kept and treated, the stench and the emission of ammonia in the atmosphere which contributes significantly to air pollution. A major problem in certain regions is also the overproduction of animal waste and its subsequent dumping in too large quantities over too small areas;
- problems arising from large-scale farming and structural changes such as drainage, the filling up or realignment of ditches, the building and metalling of rural roads and land improvement. The result is a drastic change to cherished historical landscapes, a loss of diversity and, again, damage to flora and fauna;
- problems arising from marginalisation, such as the loss of infrastructure, land abandonment, overexploitation and chemical and physical erosion of the soil.

Some of these problems occur especially in the agriculturally well-endowed regions in Europe and arise from affluence, but especially the last mentioned set of problems manifests itself in the agriculturally little-endowed regions in Europe and are associated with poverty. It is considered that a downward adjustment of support prices is necessary to alleviate part of the economic problems. Without further

policy measures, such an adjustment will undoubtedly lead to a decrease of the production volume of price supported crops by further marginalisation of agriculture in many little-endowed regions and by reducing their share in the crop rotation in regions where agriculture continues to be practiced. On the other hand, prices are likely to be maintained at such a level that the EC will at least be self-sufficient in the main agricultural products that can be grown within its borders. Therefore agriculture will remain a major user of land in the EC. Its environmental impact will then to a large extent depend on the effect on the intensity of land use under the combined influences of price reduction and continuing increase in technical know-how. In the case of extensification, agriculture in little-endowed regions will be strengthened because its products will be needed, but in the case of further intensification there will be a further marginalisation of many agricultural regions in Europe.

II. Why Yields Continue to Increase

Meester and Strijker (1985) and Strijker (1982) analysed the dynamics of soil productivity since 1950 in more than a hundred agricultural districts within the nine EC states. The productivity of labour and soil and thus the production costs differ greatly among these districts. However, in spite of this they found that the rates of yield increase per hectare were independent of this yield level, although the latter varied with a factor of about four over place and time. It also appeared that even in countries such as the Netherlands and Denmark, with a very high production level, this increase was maintained over time. An explanation for this remarkable autonomous phenomenon is that yield increases due to technical progress may often require more of some inputs per unit surface, but at the same time require less of most inputs per unit product. By definition, less inputs per unit product are needed in the case of fixed inputs like soil preparation. Surprisingly perhaps, there appears to be a number of such so called fixed inputs that are not fixed at all, but decrease with increasing yield potential. A more than fifty year old example is the optimum acidity of the soil which decreases with increasing yield level, so that at higher yields a lower pH and therefore less lime is necessary than at lower yields (cf. Van der Paauw, 1939). This phenomenon was at that time referred to as a shift from the optimum of the production function to the left to contrast with the conventional wisdom that the optimum shifts to the right because higher yields need more inputs. Other examples of the same phenomenon are the smaller amounts of plants that are needed under high-yielding conditions and the improved ecological control of weeds when crops grow well.

The law of diminishing returns is generally cited to prove the more

than proportional need for nitrogen with increasing yield. This is fair enough if nitrogen is applied in greater amounts and the other growing conditions are maintained at the same level, as in mono-factor experiments. However, the question should be put the other way round: what are the increased nitrogen needs in situations in which the yield is higher due to other improvements, such as improved control of water, pests and diseases or the use of improved varieties.

As for water, this problem was analysed by Hoogerkamp and Woldring (1966) on the basis of the results from an extensive experiment with grass and arable crops on drainage of river basin soil. It appeared that the efficiency of nitrogen use increased in the situation in which the optimum was approached from the wet side as well as from the dry side. Nielsen (1963) studied the growth of rye grass at two levels of irrigation and found that under optimum water supply not only yields were higher, but also more dry matter was produced for each kg of nitrogen that was taken up by the crop. In the case of wheat it was shown by Sieben (1974) that under optimum water conditions both the uptake from the unfertilised soil was increased by a factor of two and the fraction of nitrogen that was recovered from the fertiliser increased from 0.43 to 0.75 compared with less controlled conditions. This increased efficiency under better controlled conditions appears to be due to less nitrogen loss by evaporation, denitrification, fixation and leaching alone or in combination. Modern varieties may give only slightly higher yields than traditional varieties under poor fertility conditions, but they have a much higher response to fertilisers, especially nitrogen (CGIAR, 1985). Apart from a better control of lodging, this is because modern varieties require considerably less nitrogen per kg grain yield than traditional varieties, but take up nitrogen at least as efficiently (cf. Sanchez et al., 1973). This increased efficiency is a general phenomenon because it is directly related to the much better seed/straw ratios of modern varieties compared with traditional ones. In the seventies, the yields of wheat increased rapidly because of the better control of ripening diseases. Spiertz (1980) showed that this increased the efficiency of nitrogen use at the same time. Not only because of a better uptake, but also because of a better translocation of nitrogen from the vegetative parts to the generative parts of the crop.

Although energy accounting has many pitfalls, it is popular to compare different agricultural production systems on the basis of their input and output of energy. The labour is then accounted for as the energy that is needed for its maintenance. This concerns mainly food and firewood in low-input agriculture under subsistence farming, but in the case of high-input agriculture in affluent societies, it concerns the energy that is needed to maintain the high standard of living. On this basis, it was found by Piementel (1984) that the energy efficiency was only 0.75 (GJ output/GJ input) for Mexican

farms with only human labour or with human labour supported by oxen, about 1 for the American corn farm with human labour supported by horses and with 150 kg N/ha as fertiliser, and 2.14 for the modern mechanised American farm with 150 kg N/ha as fertiliser. It appeared that only the modern, mechanised farm had a positive energy balance. This may seem contrary to other calculations, but in those the large use of energy in the form of firewood or by slashing and burning semi-natural vegetation is often neglected. As for the Netherlands, the yield of wheat increased from about 3500 kg/ha in 1950 to 5000 kg/ha in 1970, while the efficiency of the direct plus indirect use of fossil energy stayed the same at 145 kg seed/GJ, in spite of the approximately threefold increase in labour productivity in the same period due to increased mechanisation (De Wit, 1979). A similar computation for the present yield level of 8000 kg/ha has not been made, but it is likely that the energy efficiency has increased since the beginning of the seventies. This is because yield increases were mainly due to varietal improvements and better control of pests and diseases and because the energy-demanding forms of mechanisation were already implemented.

Although it will always be possible to find exceptions, there appears to be sufficient evidence to support the following working rule: the agricultural production process is not very well understood and therefore it is difficult to manage low-yielding situations in which many and partly unknown factors interact, whereas in high-yielding situations, growth is better controlled and understood, so that inputs may be much better timed and adjusted to demand. Accordingly, although more inputs may be needed per unit surface, less are needed per unit product.

Hence, in places where a crop can be grown economically, the yields per hectare continue to increase until the potential level as dependent on climate and on type of soil and its level of reclamation is achieved. This is irrespective of major differences in productivity, prices and production costs. In other words: a crop is either not cultivated at all or it is done as well as technically possible.

The difference between good and bad soils is not so much the difference in potential yields that may ultimately be achieved, but the efforts that are needed to achieve the situation in which the yield is mainly determined by crop species, variety and weather. Whether such reclamation efforts are worth the trouble does not only depend on the increased productivity of the soil, but also on the increased productivity of man and machine.

A detailed, comparative analysis of the possibilities for production increase in the various agricultural regions of the European countries is not available. However, an analysis in a worldwide context (Buringh et al., 1975) has shown that in all parts of Europe there is still considerable leeway for further increase in soil productivity and that

the knowledge required for this is already available.

In the case of animals each additional kg of produce may require a proportional addition of food, but the maintenance costs per unit output of the animal itself and the costs of breeding replacement stock decrease with increasing milk production per animal (Spedding, 1979). Hence also for animals it holds that produce continues to increase wherever animal production is economically feasible. A recent example is the considered use of natural hormones, which promises both produce increases per animal of about 20 per cent and increased efficiency of production.

III. Consequences of Continuing Yield Increases

The consequences of this phenomenon of continuing yield increases per hectare are far-reaching, 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 one way or another, to take land out of production or to put it to other usage. If this is land with an average yield of about 4000 kg grain equivalents per hectare, this amounts to 1.75 per cent per year or 25 per cent before the year 2000. Without taking into account the existing overproduction, this equals about 20 million hectares in the present-day EC. However, the 30 per cent of agricultural land that is found in the little-endowed regions yields only about 10 per cent of total production. If mainly this low-yielding land is taken out of production, the affected area is almost doubled. On the other hand, 10 per cent of the land in well-endowed regions produces 30 per cent of total production and this may be an argument to shift the burden into production control to that direction. Even a bird's eye view of Europe reveals that the well- and little-endowed regions are unevenly distributed over the countries of the European Community. Any agricultural policy that seeks to adjust agricultural demand and supply by drastic downward price adaptation will therefore become entangled in the political discussion of where and how to take land out of regular production while maintaining economic equity between countries and regions and environmental integrity in little-endowed regions.

Another possibility of adjusting production to demand is the use of production quota for price-supported commodities. This would not present a fundamental break with existing policies. Therefore fundamental conflicts between member states with weak and strong agricultural sectors could be avoided. However, the existence of quota would not affect the continuing rise of yields per hectare, so that the maximum quantities stated in the quota would be cultivated on less and less land. The surplus acreage would then become available for the cultiva-

tion of crops not subject to quantitative restrictions. Once again, this would be done most economically in the central regions. Unless quota would also be imposed 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 products would not prevent production increases per hectare, so that also in this way the Community will, in due course, become entangled in the political discussion of where and how to take land out of regular production.

The environmental consequences of these continuing yield increases per hectare are not straightforward. On the one hand, less input is needed per unit product, so that given the total production, less input is needed and wasted, less land is needed for agriculture and more land can be returned to nature. On the other hand, the total amount of inputs per unit surface of land that remains in production increases and this may very well overburden the environment. It is also often difficult and expensive to return abandoned agricultural land to an ecologically acceptable state.

IV. Towards More Market Conformity and Solidarity

Thus, no simple policies could reduce the agricultural problems, because several aims would have to be served for the policies to be workable and to be acceptable for all member states. Apart from the traditional goals of production and income, these aims are:

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

If the price instrument is directed towards a better adjustment of supply and demand a large drain on the Community's budget is reduced 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 high. In those regions it would be impossible to maintain the level of agricultural activity that is necessary for a 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 measures may be much more effective and

cheaper than non-discriminating price supports, because they permit a greater differentiation in income levels and regional development potentials. The present policy of price support works far too much to the advantage of the large farmers in well-endowed regions to qualify as an equitable instrument for the redistribution of income. An inevitable consequence of a more market-oriented agricultural price policy coupled with structural support for marginal agricultural regions is that the burden of the restoration of the CAP will have to be borne mainly by the economically strong regions. This is fair enough, since they are going to profit most directly from the future potentials of the common European market.

V. Well-Endowed Regions

The well-endowed regions of Europe, both agriculturally and otherwise, are for a large part located around the axis London-Milan, in East Anglia, Denmark, the Netherlands, Belgium, the Paris Basin, the central and northwestern regions of the Federal Republic of Germany and the Po Valley in Italy. If the production decrease in the less-endowed regions is mitigated, production decrease has to take place in these well-endowed regions. As has been said above, 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 would mean, however, that the existing quota arrangements, such as those for milk and sugar, would have 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 allow the quota system to be replaced by a temporary 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 leave 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 of land cultivated with cereals. Another option is to confine such a levy to the grain brought onto the market to stimulate forms of mixed farming in the cereal producing areas of the Community. This would be at the expense of intensive livestock farming in the Netherlands, Belgium and parts of the Federal Republic of Germany. Here restraints are needed anyway, because overproduction and dumping of animal waste have unacceptable

consequences for the environment.

The proceeds from co-responsibility levies on surplus products should not be used to promote export of these products at rock-bottom prices, but to prevent their production. With some additional money from other EC sources, these proceeds could be channelled 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 greater variety of crops and the research establishment to work on the improvement of alternative crops.

The advantage of using land for other crops is that it may diminish the crop rotation problems that occur in many regions. These problems should not be underestimated. The present narrow crop rotations invite management practices that damage the structure of the soil and lead to an increase in pests, diseases and harmful weeds. These are often controlled chemically, which in turn creates serious risks to the environment and to 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 sugar beets can at present only be evaded by not growing the crop at all on infested soils. Other 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 not attractive, but with a view to avoiding the high taxes on energy, farmers could perhaps do more about generating their own energy requirements.

It is doubtful whether any of the crops that are available at present will play a dominant role to the extent that the surplus problem of 20 millions of hectares will be solved in the year 2000. It remains therefore necessary to find ways and means to take land out of permanent production also in well-endowed regions. Economic wisdom has it that lower commodity prices will sooner or later lead to lower land rents and land prices. This should be of some help. However, it is difficult to generalise, since in some countries and regions these lower prices have already been realised, whereas in other regions the demand for land may remain high, 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 reforest marginal soils where trees can hardly grow. Moreover, commercial forestry in the central and densely populated areas of the Community could be readily combined with mass recreation.

The establishment of semi-nature reserves on land that has been used for agricultural production or which is suitable for that purpose, also appears to be very well possible. Taking into account the great pressure of human activities on the natural environment in the central

regions, there is an urgent need for ecological refuges and corridors. Finally, cheaper land would make it easier to reserve more land for the enhancement of landscape features and environmental diversity.

None of the changes in land use will come cheap, but there is no reason for shifting the whole burden onto the agricultural sector, which will already have to adjust to the consequences of lower prices. This adjustment has to lead either to larger, more mechanised and automated farms or to family farms with external sources of income. This may work out differently in the various countries. It could be that 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 that the male member of the two-income farmer's family works alone and only on the farm, while the female member continues to work in her 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 farming, without many extra costs. It is a positive development that all over Europe agriculturists, conservationists and environmentalists band together with farmers in order to develop practical ways and means to do so. For instance, there appear to be no extra costs or time involved in maintaining the farmyard and its buildings as a valuable conservation area for lichen, mosses, bees, swallows and so on, while 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 (Tuttensor, 1986). A well propagated programme for inventive management of the many linear elements in the landscape has contributed considerably to species diversity in the Netherlands. Many arable fields and pastures have boundaries which could also contribute to the survival of now rare weeds and wild flowers by carefully keeping them free from fertilisers and biocides. This may require some extra work, but part of the costs could be recouped by savings on fertilisers and biocides. Many farms also have small and seemingly unimportant habitats that can provide a considerable conservation value. It may need only slight changes in agricultural practices to maintain them at no extra (labour) costs. This also holds for the maintenance of hedge-rows, although it should be recognised that they have both beneficial and adverse effects.

Nitrogen fertilisers form a serious environmental hazard, but much can be done to reduce the use thereof. For instance, it was found by van der Meer and van Ulm tot Lohuyzen (1986), that the recovery of nitrogen fertiliser by grass in the case of mowing increased in the Netherlands from around 50 per cent in the sixties to around 80 per cent in the eighties, but this is not taken into account in the advice to the farmer. Moreover, it has become clear that under grazing a high nitrogen status of grass is not so much needed in order to maintain an

optimum growth of closed canopies of grass, but for a rapid restoration of the grass and after sharp grazing. Also for this reason, there is renewed interest now in continuous grazing systems both in England and in the Netherlands (Lantinga, 1985). With these, the grass canopy is then always kept closed so that considerably 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 sprinkler irrigation.

Overfertilisation of arable crops also contributes considerably to the leaching of nitrogen in late summer and autumn. It has been shown that much of this can be prevented by growing crops that take up the nitrogen in autumn. Another possibility of saving nitrogen is a good adjustment of the nitrogen fertilisation to the needs of the crop. Also, much nitrogen is wasted by dumping manure from the intensive livestock systems at the wrong time and in too large quantities and over too small areas of land. This wastage and inefficient use of nitrogen fertiliser undoubtedly has to do with its price, which is at present at an all-time low.

To study the effects of an environmental tax on nitrogen fertiliser a distinction should be made between the negative price elasticity of the use of nitrogen fertiliser and of the yield per hectare. The first elasticity is likely to be large, because of the present wastage. However, the second elasticity is likely to be small, because lower yields due to lack of nitrogen lead to an inefficient use of other inputs. Hence there seems to be sufficient scope for an environmental tax on nitrogen use, which is, on the one hand, high enough to reduce the wastage of N in inorganic and organic forms to a considerable extent and, on the other hand, low enough to ensure continued efficient use of other inputs. 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 has been proposed in the Federal Republic of Germany 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 money could better be used to control other undesired environmental effects of farming.

The use of biocides for the control of insects, diseases and weeds is another environmental hazard. It has been shown that application schemes in which the use of biocides is guided by expected damage leads to considerably less use of biocides. Since the mid-seventies such schemes have been developed and used on wheat in the Netherlands. This is an important reason why the number of sprayings is only 2.5 on average, compared with 8.5 in England and 7 in the northwest of the Federal Republic of Germany (Rabbinge, 1987). These methods may very well be more economic than traditional methods, so that it may suffice

to support development research and the extension of popular use.

VI. Little-Endowed Regions

Little-endowed regions, both agriculturally and otherwise, in the Europe of the nine are located in the west and northwest of Ireland, throughout Scotland, the north of Wales, in the southeast of the Federal Republic of Germany, 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 countries which have recently joined the EC -Greece, Spain and Portugal- should also be classified as agriculturally little-endowed. The central problem in many of these regions is summarised by the fact that, in spite of a weak natural resource basis, up to thirty per cent of the population is engaged in agriculture, whereas this figure is less than 10 per cent in the well-endowed regions. Any policy that is directed towards maintaining this situation, would be economically futile and socially discouraging. It would also be 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 social and economic structures that complement and partially replace traditional agricultural structures. Combined EC and national programmes for the improvement of the infrastructure, for the promotion of industries and services, for the creation of non-farm jobs, for education and for the enhancement of mobility are more likely avenues to reduce the problems than continuing agricultural price supports. Experiences in the south-east of the Federal Republic of Germany show that the development of industrial activities and services in agricultural regions creates possibilities for agriculture as a complementary source of employment or even as a pursuit of leisure. In the so-called integrated programmes that are being prepared by the Community especially for the Mediterranean regions, the industrial and services sector will also need considerable attention.

It is true that damage to the natural environment is intrinsic to productive farming, but this being said, it is generally agreed that the continuation of farming in a traditional farming region is a necessary condition to maintain its environmental value (Van der Weijden, 1984). Some conservationists believe that a prosperous rural life is a sufficient condition, but too many examples show that this is overly optimistic. In practice farmers are more and more paid for the execution of measures that are supposed to maintain the landscape and the ecological functions of the farm. However, such dirigism pushes the farmer often into the direction of traditional farming,

because traditional methods are presumed 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 pay 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 are challenged to develop new methods to serve lasting values. If hedgerows, hill pastures or heather areas are precious elements in the landscape and valuable ecological refuges, it is reasonable to pay the farmer in less-endowed regions according to the quantity and quality of these elements. If diversity is a valuable ecological goal, why should regionally associated farmers not be paid for the number of species they preserve or for the habitats they are able to create? It would go too far to pay the farmer for not contaminating his surroundings with nitrate and biocides. But instead of dealing with a prohibition on the use of agricultural chemicals -which is difficult to enforce and therefore problematic- it would be far more challenging to develop refined technical packages and to promote their use in the little-endowed regions. These innovative techniques could then fan out to central agricultural regions.

It has been suggested that farmers in the marginal regions would be better off by growing crops that do not contribute to the surplus production. But land that is considered marginal for surplus crops, is in general also marginal for other crops, so that it remains impossible to compete with well-endowed regions. For this reason differential payments out of the earlier mentioned diversification fund in favour of the less-endowed regions would be justified.

There may be a growing market in the affluent, urban parts of Europe for special products that distinguish themselves for all practical purposes only from similar products either by their origin or by the way in which they were grown, and are thus shielded from competition by well-endowed regions. Examples are some types of wine and cheese, fish, game and other special types of meat, natural food and handicraft products. A comprehensive system of protected EC Commission marks of origin and trade names would strengthen the market position of such specialities in the interests of both the consumer and the producer.

Any policy of better adapting supply 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. For reasons of equity, some publicly supported improvement schemes may be permitted in Ireland and the new member countries which joined the EC too late to develop some of their own potentials. However, the reclamation of new polders in the Netherlands and the further drainage and reclamation of ecologically valuable wetlands in France and some other countries should come to an end.

Especially in peripheral 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-nature reserves, afforestation, recreation parks and extensive grazing by domestic animals or game. These forms of land use may change the landscape beyond recognition. They also have in common that very little employment is created. Therefore social programmes are needed that enable the older part of the population to survive with dignity and the younger part to move along.

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

VII. Some Aspects of Allocation and Financing

A compensatory geographical redistribution of EC funds in favour of less-endowed regions would create substantial allocation problems, because even the most favoured regions have their weak agricultural pockets. However, these regions should solve their own problems and should not siphon off resources from the peripheral regions where the quantitative and qualitative problems are greatest. In this respect it is disturbing that the Federal Republic of Germany claimed that 50 per cent of its agricultural land is marginal to such an extent that it would require support from the EC.

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 a stock of possible intervention instruments at Community level, whereupon the EC Commission and agencies of the Member States could draw for a number of packages of measures appropriate to each region. 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 capability to strengthen the ecological and environmental components of such packages and to support their use.

The main purpose of reducing the support prices is to diminish 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 lower prices, there are good reasons for splitting the windfall between the consumer and the EC. Since the objectives of the agricultural policy are at stake, the EC Treaty would not prevent a levy or a special surcharge on the value added tax for agricultural products to this end. The proceeds of such a tax could very well approach the present EC expenditures on agricultural policy and be sufficiently high to fund the structural changes as discussed in this paper, without crowding out other activities of the EC (WRR, 1986).

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