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NATIONAL AND REGIONAL IMPLICATIONS OF AGRICULTURAL POLICY

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THE NATIONAL IMPACTS OF CHANGES IN THE CAP

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SUMMARY

A survey is given of the national impacts of the CAP and of changes in the CAP. After an introduction which describes the historical origin and the basic principles of the CAP, section 2 gives an analysis of the national impacts of the common agricultural price policy, the monetary compensation amounts and the common and national structural policies. In the third section the national impacts of recent reform proposals of the commission of the European Community and some alternative proposals i.e. direct income payments and supply control measures, are discussed. As conflicting national interests impede the agreement on urgent adjustments of the CAP the measurement of national impacts can contribute to the development of politically feasible reform proposals. An interdisciplinary approach incorporating the analysis of the policy decision making process is advocated.

1. INTRODUCTION

Agricultural policy is primarily a sectoral policy which aims at safeguarding an adequate provision with food at equitable prices to both consumers and producers. The policy - in particular the structural policy - also seeks to create favourable conditions for raising the productivity of agricultural production and marketing, and to alleviate the social consequences of the structural adjustments to technological and economic change. In practice, however, the main effort is directed to fair income opportunities for the farming population.

Because of the coincidence of high shares of agriculture in regional employment and income and low regional levels of economic development and per capita incomes the agricultural policy generally has an equalizing impact on regional income disparity. At the introduction of agricultural protection in the West European continental countries at the end of the 19th century regional income objectives were an important consideration. The prevention of migration from the rural areas to the cities at a more rapid rate as could be absorbed by the expansion of the manufacturing industry and the tertiary sector and the avoidance of political and social tensions involved in persistent rural income depressions and an excessive growth of the urban proletariat originally were the main motive for the initiation of agricultural market and price policies. This is still so in the developing countries as is increasingly acknowledged in recent thinking on the problems of economic development.

At the founding of the European Community in 1958 the West European countries still conducted such agricultural policies aiming at the stabilization of domestic producer prices at levels necessary for safeguarding the domestic provision with farm products and granting equitable income opportunities to the farming population. Besides all countries operated structural policy programs.

The liberalization of intra-community trade and the development of a common trade policy within the framework of the European Community required the harmonisation and coördination of the national agricultural policies, in particular the national market and price policies.

The establishment of a common market for the other goods and services would have been difficult, if not impossible, without the levelling of food costs, the elimination of trade barriers and the integration of agricultural produce in the common trade policy. This implied that the member states had to give up their national systems of agricultural support, and required the development of a common agricultural policy in order to pursue the same objectives as the national policies. The elimination of distortions in the competitive conditions arising from national structural policies also demanded a coördination of the national policies in this field.

This connection with trade policy therefore necessiated the development of a common agricultural policy at an early stage in the development of the community. The development of common policies in other areas which were not under the pressure of the need to establish a liberalization of intra-community trade and a common trade policy made little progress 1).

The establishment of any common community policy involves gains and losses for each of the member countries and uncertainty about the final net impact on the national interest. An agreement on such policies is therefore difficult to achieve if there is not a strong common interest and room for a clear advantage for each of the member countries. This was the case for the CAP (Common Agricultural Policy) as an indispensable element of the creation of a common market and the development of a common trade policy.

The three underlying principles of the CAP are free trade within the community, community preference, and common financial responsibilities. The first two principles of course proceed from the basic aim of the creation of a common market and a common trade policy. The third principle of common financial responsibility expresses the solidarity

- 1) For a discussion of the lack of progress in other areas of common policy see Buckwell et al. (1982: 4 and 5).

within the community in regard to the support of the agricultural sector and the pursuit of the objectives of the common agricultural policy as expressed in art 39 of the Treaty of Rome. It is part of the package negotiated at the establishment of the European Community aimed at granting a fair share in the advantages of the creation of a common market to the countries with a relatively strong potential for agricultural exports. Moreover there was the practical consideration that without the common financing principle a common agricultural policy based on protection and community preference would not work. Without this principle countries in order to obtain the receipts of the levies would try to import as much as possible from the rest of the world and in order to avoid the payment of export refunds would try to avoid as much as possible to export to third countries (see also Buckwell et al. 1982:31).

2. THE NATIONAL IMPACTS OF THE CAP

2.1 Price and income supports

Due to the common financing price and income supports based on import levies, export refunds or producers' subsidies give rise to budgetary transfers. These however are only the visible part of the income transfers between members countries, and moreover are not necessarily in proportion to the total inter-country transfers. Trade with a third country may arise from trade with other member countries in the same commodity or export of processed products.

Essentially the common market and price policy involves a transfer of income from consumers and taxpayers to agricultural producers. Consumers are faced with higher prices due to protection and intervention and taxpayers are taxed for the financing of the net expenditures of the policy. The national gains and losses therefore mainly depend on the national shares in the income redistribution between the agricultural sector and the rest of the economy within the community. Importing countries have a relatively high share in the income transferred from the rest of the economy and a relatively low share in the income transferred to agriculture and therefore will be net losers. Exporting countries in turn will be net gainers.

Leaving out of account the costs of administration, etc. these income transfers will balance and do not represent social costs to the community as a whole. There are however also social costs involved which can be allocated to the separate member countries and which add to the gains and losses involved in the income transfers. These social costs can be distinguished into the welfare costs and the terms of trade effects.

The welfare losses pertain to the situation that the producers' gains are less than the income transferred to them by consumers and taxpayers and that the consumers and users suffer losses in excess of the income transfers. Part of the additional producers' revenue is needed to cover the costs of additional production induced by the price increase as far as the marginal costs exceed the initial price. Consumers and users of the commodity when faced with a rise of its price will substitute this for other goods and services and as consequence will suffer an additional loss of welfare.

In the case of the CAP which raises the user prices of some agricultural products like cereals, animal fats and proteins, olive oil etc. and does not affect the prices of close substitutes like manioc and soy products, these additional users' and consumers' losses are quite considerable. One could say that as a consequence industries using imported substitutes for agricultural materials of which the domestic price is raised by the CAP, benefit of a "negative protection". This applies a.o. to margarine producers and to feed millers and livestock producers using cereal substitutes.

The increase of supply and the decrease of demand also affect trade with third countries as they lead to a decrease of community imports or an increase of community exports which will have a negative impact on the world market price. If the community is a net importer this will result in a gain because of a price reduction of imports and if the community is a net exporter it will incur an additional loss because of reduced export prices. When the community has only a small share of the world market these trade effects will be small as the world market demand for the community's products will tend to be highly elastic. Particularly for dairy products and sugar and increasingly also for cereals the community has developed considerable export surpluses and the world market demand for the community's products has become quite inelastic.

The marginal revenue of additional exports consequently has become low and even may become negative. In order to reduce such unfavourable trade effects the community has looked for alternative market outlets outside and within the community. (butter export to the Soviet Union, use of skimmed milk for feed, etc.). The unfavourable trade effects and costly surplus disposals represent social costs to the community as a whole and add also to the community's net expenditures and the financial burden imposed on member countries.

The framework for the analysis exposed above can be visualized by diagrams of the supply and demand situations of member countries and of the community as a whole and can also serve for the measurement of the economic impacts of the CAP on the various member states. An excellent survey of studies using this framework to measure the costs and the national gains and losses in relation with the CAP or changes of the CAP has been presented by Buckwell et al. (1982).

The outcomes of these studies generally confirm that the importing countries (Germany, Italy, United Kingdom) lose and that the exporting countries benefit. The studies generally ignore or underestimate the negative terms of trade effects which have become increasingly important. Due to their partial equilibrium character the studies also do not take full account of the interdependencies with prices, incomes, taxes, etc. in the rest of the economy. Because of the comparative static framework of the models adjustments of demand and supply furthermore are assumed to occur immediately and proceed smoothly. The dynamic effects on the short run (e.g. the effects of a change in the herd of dairy cattle on cattle prices) and in the long run (e.g. on the regional structures, technological developments, and the financing of investments) cannot be analysed within such a framework.

The various market regulations differ considerably as to the rate of protection with respect to the world market, the stabilising effect on prices and the effective support of producers' incomes.

The most important land extensive types of production like cereals, sugar and cattle production, which occupy about 90% of the community's agricultural land are more heavily protected than vegetables, fruit, wine and intensive livestock production (pigs, poultry, veal, etc.). For some products like potatoes the protection is even confined to a moderate tariff. Generally the agricultural output of North-West-Europe is more heavily protected than that of the Mediterranean countries.

As the approaches exposed above can be elaborated on a product basis these differences in the national impacts can be taken into account.

The effectivity of a market regulation to support income and stabilise prices, however, does not depend entirely on the rate of protection and the effectivity of interventions on the domestic market. It also depends on the world market situation of the product concerned, the natural protection provided by relatively high costs of transportation and low storability, the comparative advantage of community producers and the flexibility of domestic demand and supply. If world market demand and supply depend strongly on the agricultural policies of importing and exporting countries and this market can be considered as a "surplus market" the need for protection is higher. If demand and supply within the community are flexible prices will adjust more rapidly and protection against third country producers, although it does not prevent cyclical fluctuations, will be quite effective for the long term protection of producers' income. The protection of the major land extensive productions like cereals and cattle production moreover indirectly also provides a protection to other vegetable productions as farmers have the opportunity to change to the more protected land uses.

A quantitative assessment of the national impacts of the various market regulations with reference to free trade with the rest of the world is moreover not very relevant as this is not a politically and socially feasible policy nor for the community, neither for each of the member countries. The measurement of the effects of a policy requires the comparison with some alternative policy (Buckwell et al., 1982:58) and to make sense this has to be a feasible alternative. The approaches exposed above therefore are more appropriate for the measurement of the impacts of changes in the CAP as for dealing with the elusive question of the national impacts of the CAP.

2.2 The MCA's

A common market with uniform prices for agricultural products actually has existed only for a few years. At the beginning of the seventies already soon after the harmonisation of national prices had

been achieved, the instability of world currency markets and the lack of coördination of national monetary and economic policies within the community led to a series of devaluations and revaluations. A change in the national exchange rate with respect to other member countries and with respect to the EUA in which the common prices are fixed, leads to an immediate change in the internal agricultural support prices. Appreciating countries experience an immediate lowering of the support prices and depreciating countries a rise of these prices. As such abrupt price changes were not acceptable a system of border taxes and subsidies has been introduced to offset the effects on agricultural prices and farm incomes. Appreciating countries have import taxes and export subsidies (positive MCA's) and depreciating countries have negative MCA's.

There is no sound economic argument for such a full compensation of the effects. An adjustment of the exchange rate generally is preceded by an internal monetary development leading to a growing divergence of external and internal prices. An adjustment of the agricultural support prices after a change of the exchange rate therefore partly is to be considered as a correction on previous opposite changes in price relationships. After the change of exchange rates the internal prices moreover will gradually adjust under the impact of changing export and import prices. This implies that at the utmost there is a ground for partial and temporary compensations. The discussion whether the MCA's did provide fair compensations for changes in the terms of trade of the agricultural sector in the various member countries therefore is rather unfruitful. Not every change in the terms of trade of a national agricultural sector moreover should be offset. Within the framework of intra-community trade a strengthening of the competitive position of national industrial sector should lead to a relative decline of the terms of trade of the other sectors in order to induce a national and regional reallocation of resources.

Actually the MCA system has allowed member countries to manipulate their agricultural prices in relation to the CAP and thus to respond to national social and political pressures and pursue national policy objectives. (Ritson and Tangermann, 1979). This freedom to manipulate national prices is not unconstrained as countries have only an opportunity to reduce their MCA's. A general reduction of MCA's

is to be decided in the Council of Ministers and therefore is a matter of negotiation which generally takes place within the framework of the price negotiations. It therefore is a matter of compromise between conflicting national interests. Intermediate adjustments of national MCA's are subject to community approval.

In practice, however, countries are free to diminish their MCA's; member countries with negative MCA's thus can raise their prices virtually autonomously and countries with positive MCA's although they seldom make use of the opportunity, could raise them.

As has been exposed by Ritson and Tangermann (1979) both the opportunities offered and the use made of them generally were in accordance with the national needs. It is to be expected that high income countries with a relatively poor farming structure and net exporters strive for relatively high national prices and the other way round. Until 1978 the evidence supported this hypothesis but since then the United Kingdom, although being a net exporter with a relatively low per capita income and favourable farming structures in consequence of the revaluations of the pound has become a positive MCA country. This requires another explanation (Buckwell et al. 1982:65). Possibly a strong pressure on the United Kingdom government by the farmers or the strive for a higher rate of self-sufficiency in food in order to strengthen the balance of payments position on the long term have been the motivation to maintain the positive MCA's at the cost of national consumers and a budgetary transfer to the community.

Because of the common financing the MCA taxes and subsidies involve namely income transfers not only between national producers and consumers but also between member countries and they moreover have impacts on social costs in relation with production and consumption and in relation with the community's terms of trade and costs of surplus disposal. These effects on the community as a whole and on separate member countries can be treated and measured within the same analytical framework as presented in 2.1 (Ritson and Tangermann, 1979; Schmitz, 1979 and Buckwell et al., 1982). With regard to the common price policy the impact on the community as a whole will depend strongly on the effect on the average level of national prices in relation to the common price. If the average price is raised the community will face negative welfare costs and an unfavourable terms of trade effect. The latter will also involve a rise in the net expenditures for the CAP.

For separate countries the inter-country transfers represent national costs or benefits. Net exporting countries with positive MCA's (export subsidies and import taxes) will gain and also exert a negative influence on the community's terms of trade and costs of surplus disposal and thus on the community budget (The Netherlands, e.g.). Importing countries in the same situation will lose but also contribute negatively to the terms of trade and the costs of surplus disposal. (Germany, e.g.). Negative MCA's in reverse contribute positively to the terms of trade and the costs of surplus disposal and induce positive (negative) budgetary transfers for net importers (exporters). The effects on terms of trade and costs of surplus disposal generally are neglected in the discussions about the effects of the MCA on the community budget (Meester, 1980).

2.3 Structural policies and dynamic impacts

In the field of structural policies the member states still have ample room for national policies. The community provides financial supports for structural improvements in regional infrastructures concerning agricultural production, processing and marketing. The community also has issued guidelines (the so called Mansholt guidelines of 1972) to coördinate national policies with respect to investment aids to individual farmers, retirement schemes, socio-economic extension work and professional training of farmers and participates in the financing of national programs set up in agreement with these guidelines. Furthermore since 1976/77 income supports are provided to farmers in mountainous and less favoured areas also in order to prevent the deterioration of nature and landscape in these areas. Recent developments in the common agricultural structural policy are to support regional agricultural development plans (Mediterranean regions, Ireland) and to participate in setting up integrated regional development plans together with the Regional Fund and Social Fund of the community.

The amount of money spent in this Guidance Section of the CAP is extremely limited and the direct impact on inter-country transfers is negligible if compared with the transfers deriving from the common agricultural price policy (EC 1981b). The national expenditures for agricultural policy of the member states exclusive of

social insurance premiums are considerably higher and for the community as a whole in 1977 were about equal to the total community expenditures for the CAP (EC, 1980:243).

In particular the national policies have a considerable impact on the development of agricultural production and on regional and national competitiveness. Modern agriculture is embedded in systems of geographically and functionally closely linked agricultural, industrial, servicing, marketing and transporting firms and institutions. If the conditions for an efficient functioning of such agri-business systems are not fulfilled, and an efficient pattern of inter-industrial linkages and institutional infrastructures cannot be developed, the development of agriculture itself also will stagnate. International and interregional competition in agriculture increasingly have become a matter of the over-all competitiveness of such interdependent systems of institutions and industries. Because of the scale economies which can be achieved in the different components of such systems, (e.g. in processing, marketing and research and development) a sufficient geographical concentration of agricultural activity and efficient transport facilities (rural road network, etc.) are required.

Besides the development of such systems is favoured by the availability of specialized technical skills, of facilities for education, research and development, and of specialised supporting industries and services. The locational requirements of the modern agri-business systems have become very similar to that of other industrial sectors.

The expansion of market outlets in consequence of the creation of a common market and the price stabilisation and income protection measures of the CAP have favoured this modern agricultural development and thus favoured regional agricultural specialisation and concentration. This is of course in accordance with the objectives of the European Community to promote a more efficient production by the realisation of scale advantages and the concentration of production in the most favourable locations.

National policies are also aimed at the promotion of such developments. Public investments are made in land reconsolidation schemes, rural reconstruction programs, irrigation systems and agricultural research, development, and extension services.

There is a bias involved in such public expenditures which is bound to reinforce existing differences in regional development in favour of the economically more developed and agriculturally advanced regions. Public funds for such investments in agricultural infrastructures, and in research and development are generally more abundantly available in the economically more developed countries and regions. They may be used to acquiesce farmers when they complain about an increasing income disparity arising from a rapid economic development in other sectors of the national and regional economy (de Veer, 1982).

Common and national agricultural policies thus reinforce the tendency of regional specialisation and concentration of agricultural production and growing divergencies in regional agricultural development. The results of the RICAP-study (EC, 1981b) confirm this; its main conclusions are that the regional economic environment is the main determinant of the developments in regional agricultural incomes and that the CAP did not prevent the increase of the already existing regional disparities in agricultural development and farm income.

The increase of agricultural output particularly taking place in the economically more developed and agriculturally advanced regions of course also have an impact on the self sufficiency rate of the community and thus will raise the net expenditures for the CAP and the inter country transfers resulting from the CAP. As far as the surplus production results in a lowering of producers' prices the nations and regions which did not raise their production nevertheless are faced with a decrease of farm income.

3. NATIONAL IMPACTS OF REFORM PROPOSALS

3.1 The decision making process

The commission proposals for a reform of the CAP until now are mainly inspired by the need of a cut on the net expenditures of the CAP and a reduction of surplus productions and the problems concerning the budgetary contribution by the United Kingdom. Actual decisions, however, have to be taken by the Council of Ministers at which each minister will have to take account of the implications for the national interests. As exposed above changes in the CAP have complicated effects on the national interests. Koester (1977) pointed out that it seems even impossible to find a set of common price changes which is accep-

table for each of the partners and considers this as a danger for the existence of the community. To solve this problem a set of decisions on a large number issues is combined in the same package in order to allow every minister to return home with some positive result in terms of the national interest.

Even if we assume that also the Council of Ministers is convinced of the urgency of reforms, it is clear that it is extremely difficult to reach an agreement on radical changes of the CAP having large and uncertain impacts on the national interests. On the one hand, there is not like at the beginning of the EC a common benefit of sufficient importance to enforce a consensus and, on the other hand, the pressure to avoid a crisis which could endanger the future of the community and puts at stake the economic and political benefits of the community for each of the partners, has not yet been sufficiently strong to make a postponement of decisions unfeasible and the acceptance of a compromise unavoidable.

In order to develop feasible proposals it is, therefore, important to analyse the national impacts in order to aim at a balance of national interests. One has to be aware, however, that the weights given by a minister of agriculture to the various national impacts generally will be quite different from the criteria applied by agricultural economists at the measurement of the national impacts of changes in the CAP.

National ministers of agriculture will primarily take account of the impacts on national farm income, the national budget and the national agricultural development and market shares and will be less inclined to look after the effects on consumer prices and the community's terms of trade and will hardly be interested in welfare costs. Nevertheless for the sake of a well informed public discussion and an adequate consideration of the various interests a thorough analysis of the national and regional impacts is of great importance.

3.2 Recent reform proposals

The most recent reform proposals of the commission (EC, 1981c) contain the following main elements (SER, 1982):

- a. A price policy aiming at the adjustment of community prices into the direction of world market price levels and a balancing of community prices to achieve a more adequate orientation of agricultural supply on demand within the community;
- b. A more active international trade policy which contributes to a better regulation of world markets and stabilisation of world market prices, a.o. by means of trade agreements with important exporting countries and long term export contracts;
- c. Introduction of production targets in combination with financial coresponsability of producers and reduction of intervention price levels when target levels are exceeded;
- d. An active structural policy adapted to the particular needs of each region;
- e. A possibility to provide direct income payments to specific groups of farmers, in particular small farmers, as a compensation for the income effects of financial coresponsability and reduction of intervention price levels;
- f. Improvement of the communautary quality regulations and the administrative supervision of community expenditures;
- g. A stronger discipline with regard national support measures to prevent negative impacts on the community as a whole.

Within the framework of this article it is impossible to even strive for a complete account of the national impacts of these proposals and we shall confine ourselves to some remarks.

It is clear that control of the further expansion of production and of further growth of export surpluses is a major aim of the proposals. The prevention of the costs of surplus disposal is to be achieved mainly by a reduction of producers' prices within the community and negotiations with countries outside the community,

The reduction of the net expenditures of the CAP and of the VAT-based financial contributions of the member countries is of course a common aim and in the interest of each of the partners. With regard to the national impacts of price reduction for both producers and consumers we may refer to preceding sections (2.1 and 2.2).

With respect to the coresponsability levy it depends on the point of view and the appraisal of the situation if one considers this as a tax on producers or on consumers. If one compares with the alternative of a price cut the coresponsability levy is to be considered as a tax on consumption. The ultimate effect than is a financial transfer from consumers to the community for the financing of surplus disposal a loss of consumer welfare. The national impacts are an income transfer from member countries with a net import of the levied commodity to net exporting member.

If one compares with an unchanged level of producer prices the coresponsability level is a tax on producers and involves with respect to the terms of trade effect and cost of surplus disposal a transfer from net exporters to net importers. Anyway the producers and regions which did not raise their production suffer a loss of income due to the expansion of production by other producers and the consequent lowering of producers' prices.

The direct income payments probably will have a redistributational effect in favour of member countries with a relatively large number of entitled farmers. With respect to the national impacts of structural policies and an increased discipline in national support schemes we may refer to the discussion in section 2.3. Apparently the commission has in mind national income transfers in favour of agriculture and not the national structural policy programs and regional development plans with their output increasing effects.

The agricultural structural policies of the community which aim at the development of less developed regions also will contribute to a further expansion of production and consequently to a further increase of surplus and reduction of prices fixed by the community or prices dependent on the market situation within the community. One may doubt if this ultimately will lead to a reduction of regional disparities as it will lead to a marginalisation of other regions (Weinschenck, 1982). There is still a lack of coördination of common and national structural policies with the market situation. The reform proposals offer little prospects for a better linking of agricultural policies with regional development objectives as advocated in the RICAP-study (EC, 1981b).

3.3 Alternative proposals

Although the rise of agricultural output resulted mainly from technological developments and improvements in the structural and physical conditions for farming the experience of the CAP has been that an income policy on the basis of a price policy does not prevent a continuous increase of surplus production and rise of the costs of the policy and of the inter-country transfers. This imposes heavy political pressures on the community and meets increasing objections.

On principle there are two ways to tackle this problem. A reduction of agricultural prices both for producers and users aimed at intra-community market equilibrium with compensation for the farmers' loss of income by direct income payments (van Riemsdijk, 1973, Koester and Tangermann, 1978; Marsh, 1977 and 1980) or the introduction of supply controls.

Replacement of income support on the basis of prices by direct income payments will lead to a reduction of surpluses as farmers will be faced with a lowering of their marginal revenue prices and reduce their output whereas demand will be stimulated by a lowering of consumer prices. The social costs of such a system, with regard to producers' and consumers' losses, surplus disposal costs and terms of trade effects will be lower but it implies a shift of the financial burden from consumers to tax payers. The financial transfer in relation to consumer prices will be in proportion to the share of food in the national income expenditures and therefore will tend to be relatively higher in low income countries, whereas the VAT-based financial contributions to the community budget are in proportion to the national income. For this reason the introduction of a commonly financed system of direct incomes supports will result in an income redistribution in favour of the lower income member states. Taking into consideration the present national budgetary problems such a policy involving at least at the short term a strong increase of the budgetary costs will however hardly be feasible.

The introduction of direct income payments would allow to take better account of income disparity within agriculture. In the recent commission proposals (see 3.2) this is the motivation for the proposed supplementary direct income supports for specific groups of farmers.

Such a differentiation of commonly financed direct income payments would be in favour of countries with relatively unfavourable farming structures and a high proportion of low income farmers.

The administrative implementation of such a system of commonly financed direct income payments will have to rely on the national systems of farm registration and government administration. Considering the differences in national systems this will raise difficult problems in respect of the uniform application in all member states and the administrative supervision by the community.

A national financing of compensating direct income payments as proposed by Marsh (1977 and 1980) and Castle (1981) would involve a redistribution in favour of countries with a low selfsufficiency rate at the cost of exporting member countries. It would also imply the abandonment of one of the basic principles of the CAP (see 1.1). It could be argued of course that a national redistribution of income in favour of the agricultural sector should be a national responsibility and that community support for such a national redistribution should depend on a country's ability to finance such a national income redistribution i.e. the levels of national per capita income and farmers' incomes and the share of agriculture in the national income (Castle, 1981). However, the important positive dynamic effects of the common market for the expansion of non-agricultural exports in favour of the industrially exporting countries also will have to be taken into account (de Hoogh, 1975). A decision to renationalise the agricultural income support policy will be difficult to accept for the countries with important agricultural exports and could easily lead to protective countermeasures in other sectors and thus endanger the future of the common market and of the community.

As to the longer term dynamic effects of direct income supports it is to be expected that it will favour the continuation of less efficient farming structures and will hamper the expansion of more efficient farms and the development in regions with comparatively favourable conditions for further agricultural development. Also in this respect the national impacts of a direct income support system probably will diverge, although it is difficult to assess the national gains and losses involved. The unfavourable dynamic effects could of course be considerably diminished by excluding farm successors (van Riemsdijk, 1973).

The community until now has rejected the idea of supply controls even though from the beginning supply controls have been applied in the common sugar market regulation. For other products with a greater variety of uses and of market outlets effective supply controls, however, will be more difficult to implement.

Supply controls imply the fixation of delivery quota or production allotments on the level of the individual farm. Deliveries or production within the quatum or the production allotment have a guaranteed price or revenue and excess production is prohibited or has to be sold at lower prices (e.g. world market prices). The linking of coresponsability levies to production targets as proposed by the commission (see 3.2) and already applied in the dairy market cannot be considered as effective supply control measures because individual producers are not directly faced with the consequences of their own output decisions but only experience the consequences of the aggregate changes in the volume of production. A super levy which has been discussed for the dairy market and which involves a tax on individual deliveries in excess of a fixed quantity is to be considered as a quota system even though the commission has been anxious not to mention the word.

There is a great variety in quota measures with respect to fixation of quota, transferability, redistribution of abandoned quota rights, price differentiation and practical implementation (OECD, 1975) which we shall not discuss.

At the level of the individual producer the economic impact of a production restriction will depend on the flexibility of supply. When a producer is forced to restrict his output can save considerably on the use of purchased inputs, and due to alternative use possibilities, has high opportunity costs for his fixed resources he will be less unfavourably afflicted than a producer with a low supply elasticity. There is also a dynamic feature as production restriction will impede the application of new technology and the development of more efficient farm plans and thus will also prevent favourable shifts in the supply function (Alston, 1981). This especially will have a negative impact on farms and regions with favourable opportunities for modernisation and expansion.

The national supply function can be considered as an aggregate of the individual supply functions. The national impact with respect to supply therefore will depend on the characteristics of the national producers. A member country with a relatively large share of producers with an unflexible supply will on the short term be more negatively affected than member countries with a generally more flexible supply. On the longer run production restriction will involve a relatively greater disadvantage for countries with potential comparative advantages for the expansion of production and the future increase of their market share.

The introduction of supply controls will also involve a loss of income to farmers and, therefore, generally will lead to a compensating price rise and higher consumer prices. This causes an additional transfer of income from consumers to agriculture and an additional consumers' loss which on the national levels will result in a net loss for importing member states. Supply controls will also cause an increase of the social costs with respect to production as the individual outputs will be cut off at different marginal cost levels. These producers' losses could be lessened by a transferable quota system which would allow producers with relatively low marginal costs of production to purchase quota rights from producers with relatively high marginal costs. One could imagine an intercountry transferability of quota rights which would allow member states with relatively favourable opportunities for the expansion of production to take over production from countries with less favourable conditions to the advantage of both. The positive effect of a supply control is of course the possibility of a rapid reduction of surplus production and therewith of the net expenditures of the CAP.

The evaluation of the national gains and losses involved in the introduction of a quota system is very complex and difficult and may also be different for the short and the long term. The uncertainty about the national impacts may be expected to give rise to national claims for additional quota rights to compensate for specific consequences for national farm incomes or national agricultural development. Moreover, there will be the argument about which country in particular is to be held responsible for the development of surplus production and, therefore, should accept an additional curtailment of its national production.

It must be feared that because of the divergent and uncertain national impacts it will be nearly impossible to reach an agreement about the introduction of a quota system in the community. A quota system could however be combined with measures to improve the effects on personal and regional income distribution and to meet objections of different member states (see the proposals for the dairy market by Woltjer, 1981). The differences in the national conditions for an effective administration of quota systems will be another important impediment for setting up an adequate common supply control policy.

4. CONCLUSION

Changes in agricultural policy generally involve important but uncertain national impacts with respect to budgetary transfers, effects on national incomes and balance of payment positions and income consequences for consumers, tax payers and farmers. The complexity and uncertainty of these impacts make it extremely difficult to reach an agreement on a change of policy even when this is urgent from the viewpoint of the continuation of the CAP and the future of the community. An important feasibility requirement for any reform proposal is that it contains a fair balance of gains and losses for each member state. The identification and measurement of the national impacts of the CAP for this reason is important for the development of feasible reform proposals. To avoid frustrations on the part of economists which analyse the economic impacts of reform proposals it must be understood that the political evaluation of the national impacts may be quite different from that of agricultural economists. Interdisciplinary research gaining a better insight in the political decision making process could be useful.

LITERATURE

- Alston, J.M. (1981) A note on the Effects of Non-Transferable Quotas on Supply Functions.
Review of Marketing and Agricultural Economics, 49 (3).
- Buckwell, A.E., Harvey, D.R., Thomson, K.J., Parton, K.A. (1982) The costs of the common agricultural policy.
London, Croom Helm Ltd.
- Castle, B. (1981) Reform of the CAP.
Luxemburg, Socialist group of the Euro-parliament.
- EC (1980) De tōestand van de landbouw in de Gemeenschap. Verslag 1980.
Luxemburg-Brussel, Commissie van de Europese Gemeenschappen.
- EC (1981a) De toestand van de landbouw in de Gemeenschap. Verslag 1981.
Luxemburg-Brussel, Commissie van de Europese Gemeenschappen.
- EC (1981b) Etude des effets régionaux de la politique agricole commune.
Brussel, Commission des communautés européennes.
(Collection études, serie politique Régionale; no. 21).
- EC (1981c) Richtsnoeren voor het Europese Landbouwbeleid.
Brussel, Commissie van de Europese Gemeenschappen.
(Com (81)608 DEF).
- Hoogh, J. de (1975) De Gemeenschappelijk Landbouwmarkt en de Nederlandse economie.
Den Haag, Landbouw-Economisch Instituut.
- Koester, U. (1977) The redistributational effects of the common agricultural financial system.
European Review of Agricultural Economics, 4 (4).
- Koester, U., Tangermann, S. (1978) Supplementary farm policies by direct income proposals.
European Review of Agricultural Economics, 4 (1).
- Marsh, J.S. (1977) United Kingdom Agricultural Policy within the EC.
University of Reading.
- Marsh, J.S. (1980) The reform of the common Agricultural Policy with reference to the United Kingdom.
Brussel, Commissie van de Europese Gemeenschappen.

- Meester, G. (1980) Doeleinden, instrumenten en effecten van het landbouwbeleid in de EG.
Den Haag, Landbouw-Economisch Instituut.
- OECD (1975) Supply control in agriculture.
Paris, OECD.
- Riemsdijk, J.F. van (1973) A system of direct compensation payments to farmers as a means of reconciling short-run to long-run interests.
European Review of Agricultural Economics, 1 (2).
- Ritson, C., Tangermann, S. (1979) The economics and politics of monetary compensatory amounts.
European Review of Agricultural Economics, 6 (2).
- Schmitz, P.M. (1979) EC price harmonization: A macroeconomic approach.
European Review of Agricultural Economics, 6 (2).
- SER (1982) Advies EG-beleid.
Den Haag, Sociaal Economisch Raad.
- Veer, J. de (1981) Theory, analysis and Methodology.
European Review of Agricultural Economics, 8 (2/3).
- Weinschenk, G., Kemper, J. (1982) Agricultural policies and their regional impact in Western Europe.
European Review of Agricultural Economics, 8 (2/3).
- Woltjer, E. (1981) Ontwerpresolutie inzake maatregelen tot herstel van het marktevenwicht in de marktsector.
Luxemburg, Europese Gemeenschappen. (doc. 1-827/80).

FINAL REPORT

Theory, Analysis and Methodology.

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1. The theme of the conference.

The central theme of the conference is relevant for the economic and political situation in many European countries and the economic and political communities of Europe. An uneven regional development linked to a regional ethnic or racial consciousness or a common language, history, culture or religion have become a disintegrative force in many states 1). Without being exhaustive and confining myself to the West of Europe I may refer to the situations in Belgium and Spain and the recent history of nationalism in Scotland (Carey et al., 1980). The international recession moreover imposes heavy constraints on government interventions to contain and manage regional crises; not only because of the necessity to curtail government expenditures but also because of the difficulties involved in the development of new industries. The pressure of international competition tends to afflict most heavily the labour intensive industries in less developed regions. As regards agriculture we can moreover mention the surplus problems and the stagnation of the growth of demand as limiting factors.

The inability to cope with regional underdevelopment problems also threatens to upset the functioning and further development of Europe's political and economic communities. After a considerable reduction (about 50%) during the fifties and sixties regional income disparity in the E.C. seems to have increased again since 1970 (Molle, 1981) 2). However, a considerable and increasing part (about 80%) of the present regional disparity can be connected with national income disparities among the member states. It seems that national governments have been more succesful in the reduction of regional disparities than the community in the reduction of national disparities. A policy to reduce national disparities would require a transfer of funds between member states and an important effort in that direction would require more solidarity of the member states than they have been showing until now (Molle, 1981). The accession of the new member states will exacerbate these problems.

The central theme of the conference is not regional development per se but the links between agriculture and regional development. An important characteristic of less developed and underprivileged regions is the relatively large share of agriculture in employment and income 3). In general this is not caused by a strong development of agriculture but rather by a weak development of the other industries and economic sectors. The agricultural sector itself is also stagnating and agricultural productivity is low in these regions. It often concerns peripheric and remote regions which are also agriculturally less favoured with respect to natural and structural conditions.

What Myrdal (1957) called the process of circular and cumulative causation is often working in such regions. The modern development of agriculture and its adjustment to technological and economic change is characterised by mechanisation and automation, intensification of land use, specialisation, diversification and a strongly increased linkage with other sectors of the economy. This development not only necessitates an outflow of labour from agriculture but also requires improvement of transport roads, water management systems, parcellation and buildings to meet the demands of labour saving and yield increasing technology (de Veer, 1979). It moreover demands a highly developed infrastructure of research and development, servicing, input industries, processing, transportation and marketing. If the conditions for an efficient functioning of such agro-industrial complexes cannot be fulfilled and an efficient pattern of interindustrial linkages cannot be developed not only a stagnation of agricultural development but also a cumulative process of regional underdevelopment with a declining and aging population, poor employment and investment opportunities, and a deficient social infrastructure are likely to follow.

2. The importance of agriculture

As has been pointed out by Professor Wibberley (main paper) the importance of agriculture as a source of employment and income in the rural areas and the spatial impact of agricultural land use have been declining. In highly developed economies agriculture accounts for only a few percents of national income and employment. Even in rural areas most workers are not farmers and most farmers have small farms which cannot provide them with a sufficient living.

But even in a highly developed economy agriculture and the industries depending on agriculture still have a considerable share in the tradable sector 4). The size and development of this tradable sector,

i.e. the industries involved in the production of internationally and interregionally tradable goods and services, are important determinants of the general economic development and the level of income and employment which can be sustained in a country or a region.

The major part of both agricultural production and agricultural land use are moreover in the hands of a minority of the farms registered in the census; typically 70-80% of the total agricultural production and land use are performed by 20-30% of the farms. These farms generally are sufficiently large for an efficient use of modern farming methods and a full utilization of the family labour force.

This dichotomy in agriculture creates a lot of confusion and is apt to lead to inadequate analysis. A careful definition of agriculture in accordance with the type of problems to be analysed is required. The analysis of the social problems of the rural population requires an other definition of agriculture than the analysis of agricultural income development and resource management.

3. The causes of divergent regional agricultural developments

With regard to the analysis of the causes of uneven regional agricultural development and its remedies different theoretical approaches are relevant as it has been exposed in many papers. (o.a. Cambier, Group A1; Bryden, Group B3; Bonnieux and Rainelli, Group A1).

International trade theory, that is concerned with the international division of labour and the flows of trade evolving therefrom, is also relevant for regional specialisation and interregional trade.

According to this theory the basis of international and interregional trade lies in comparative cost advantages which are not neutralized by transportation cost.

As stated by Myrdal (1957) the theory of international trade has not been able to explain the huge economic inequalities between countries and regions. The classical doctrine derived from this theory that trade initiates a tendency towards an equalisation of factor prices and is an alternative to factor movements can not stand up to the facts. This however, should not be an argument to throw out the baby with the bath-water, as it has been suggested in some papers. (o.a. Cambier, Group A1).

Even if the theoretical structure is untenable the brickstones still may be usable. In particular the "nature of trade theories" which elucidate why some productions are peculiar for certain coun-

tries and regions, are relevant for an explanation of divergent regional developments.

The two classical factors responsible for the geographical distribution of industries besides transportation cost are (1) differences in the availability and quality of natural resources and (2) differences in factor proportions. Elaborating a distinction made by Scheper (1974) we may associate these various locational factors with the names of Von Thünen (transportation cost), Ricardo (natural conditions) and Heckscher-Ohlin (factor proportions).

The importance of transportation cost has declined with the technological developments in storage, conservation and transportation. The strong increase of interregional agricultural trade and competition mainly has evolved from the decreasing importance of transportation cost. Nevertheless transportation cost still play an important part. The location of livestock production and processing still depends strongly on the availability of feed materials from local production or from overseas imports because the transport over land of processed livestock products - in particular dairy products, beef and pork - is considerably cheaper than that of the equivalent amounts of feed needed for the production. (See with regard to the location of processing industry in Poland Novak (Group A4) and Rouba (Group A5). In this sense livestock products still have a "Von Thünen-character". This also is an important factor for explaining the spatial distribution of the entire agricultural production. At the consumption pattern prevailing in high income countries the major part of the capacity for vegetable production, in particular agricultural land, is used for the production of feed for livestock production at a short distance and often even on the same farm.

In vegetable production the natural conditions still have a strong impact on the input-output relations and are, therefore, an important factor for the location of the various crop productions and, indirectly, also of the various branches of livestock production. Agricultural products, therefore, also have a strong "Ricardo-character". Considering the declining importance of transportation cost we must even expect an increasing tendency of regional specialisation on the basis of comparative cost differences originating from differences in natural conditions.

However, natural conditions to an increasing extent have become manmade. Modern technology enables to level land, ameliorate soils

and (re)construct water managements systems. Deficiencies in natural conditions moreover increasingly can be compensated by the use of modern yield increasing inputs, the application of adapted farming systems and cultivation practices and the development of new crops and crop varieties.

Such improvements of physical conditions and adaptations of agricultural technology generally require heavy public investments in land consolidation schemes, rural reconstruction programs, irrigation systems and agricultural research, development and extension services.

We should be aware of the bias involved in these public investments which is bound to reinforce existing differences in regional development in favour of economically more developed and agriculturally more advanced regions. Public Funds for such investments in agricultural infrastructures and in research and development (see Evenson, 1967) are generally more abundantly available in economically more developed countries and regions. They may be used to acquiesce farmers when they complain about an increasing income disparity arising from a rapid economic development in other sectors of the national or regional economy.

Moreover, the accumulation of capital within the farming sector itself tends to be higher in agriculturally more favoured regions and this still is the most important source of financing capital in both, the so called market economies and the so called socialist countries. As a consequence agriculturally more favoured and advanced regions with more efficient farming structures also tend to offer better opportunities for a full and rapid utilization of improvements in physical conditions and infrastructures and of new technology and, therefore, to offer more promising prospects for effective and profitable public investments. (see also Vincek Budin, Group A1)

Of course serious natural handicaps like extremely adverse climatological conditions, elevation and slope are difficult to compensate for. The increased potential to improve physical conditions and to develop adapted technology consequently will tend in a further deterioration of the competitiveness of the least favoured regions which generally also offer bad prospects for economic development in other sectors.

I do not have the impression that agricultural commodities have a strong "Heckscher-Ohlin-character" and that factor proportions play an important role in agriculture. The elasticity of substitution between the factors of production, labour and capital in particular, is relatively high as compared with other industries. When labour is abundant and capital is scarce agriculture tends to be a relatively labour intensive industry and at high wages it is one of the most capital-intensive sectors of the economy 5). This implies that agriculture will not show a strong tendency to move away from regions with a high wage level or move to regions with a low wage level and that no important equalising influence on regional income disparities is to be expected therefrom. This hypothesis seems to be confirmed by the results of the RICAP-study (EC, 1981) (see also Clerc, Group B1) and by the analysis of Bonnieux and Rainelli (Group A2).

At a more disaggregated level, however, agricultural enterprises with different labour capital proportions can be distinguished. But considering the regional specialization and the location of the various agricultural enterprises this seems to be dominated by the other locational factors.

Only when looking at the division of labour in the socialist countries between the private and the collective sector the Heckscher-Ohlin-principle seems to work. The private sector concentrates on capital and land extensive and labour intensive production enterprises and farming systems 6). This has an institutional rather than a geographical basis and is connected with the allocation of land and capital to the two sectors and with the availability of labour. However, in many socialist countries the private sector tends to be relatively more important in the less favoured and economically less developed regions. And this may involve a bias in favour of the more developed regions with respect to the allocation of capital and the development of agro-industrial complexes.

4. Economies of scale

At a first glance economies of scale do not seem to be an important locational factor in farming. Modern farms in Western Europe and other highly industrialised market economies generally are relatively small firms with a labour force of 1-2 workers (Bergmann, 1975).

These firms concentrate on those activities which can be performed efficiently on the scale that the farm allows. (Boussard, 1976). The requirements of a full and efficient use of modern large scale farm outfit which cannot be met by the individual farm are met by the cooperative use of implements, contract-work, or the provision of services by downstream or upstream industries. This principle of external organisation also applies to activities like research and development, marketing, farm administration and all sorts of expert advice.

The efficiency of such a small scale farming structure therefore depends strongly on the surrounding infrastructure of downstream and upstream industries, servicing firms and, last but not least, public services. This structure contrasts strongly with the official doctrine of agricultural development in the socialist countries according to which the solution of the problems of scale primarily is sought in the full integration of agriculture in large scale agro-industrial complexes.

It would be interesting to discuss the pros en cons of these divergent systems of organisation in more detail. I have the impression that the socialist countries tend to overestimate the importance of economies of scale and advantages of large scale organisation in farming, and that, on the other side, they underestimate the importance of scale in processing, transport and marketing. A comparative analysis of the different systems concerning efficiency, flexibility in adjusting to changing conditions, capacity for technical and organisational innovation and the position of the agricultural producers vis à vis the large organisations at the input and the output side of the farm would be interesting and could be enlightening. The bargaining position of agricultural producers in their confrontation with large firms is certainly a matter of concern in market economies and the footloose character of multiregional and multinational firms can have an important impact on regional development as discussed e.g. in the paper of Montigaud, Group A4) 4).

The conference has not provided us with clear and definite answers about the potential of each of the systems for the solution of regional development and disparity problems. (see also Gburczyk, Group A6).

The point which I want to stress is that in both systems the activities involved in agricultural production and the processing and marketing of food are strongly interrelated both geographically and organisationally and are linked together either formally by a complete vertical integration in agro-industrial complexes or more loosely on the basis of commercial and contractual bonds. Interregional competition in agriculture has to a great extent become a competition between chains of integrated agricultural, industrial, servicing, marketing and transporting units. Some of the components of such an agro-foodsystem may involve scale requirements which cannot be adequately met because of too small a market for the regional produce. Also the geographical concentration of agricultural production with its impact on the internal distances for transport of inputs and outputs between farms and industries play an important part. A higher concentration enables to achieve a larger scale in processing as the scale advantages in production are less soon neutralized by increasing internal transport cost. (See also Novak, Group A4, and Rouba, Group A5).

An insufficient size for an efficient functioning of agro-industrial complexes and for the development of an efficient pattern of interindustrial linkages and infrastructural provisions in regions with a prevailing agricultural orientation may not only lead to a stagnation of agricultural development and a decline in regional competitiveness but also initiate a cumulative process of underdevelopment with the concomitant phenomena of a declining and aging farming population, poor employment and investment opportunities and a deficient social infrastructure.

There are also dynamic aspects involved in the operation of economies of scale as a locational factor 8). They may change under the impact of changes in transportation cost, energy prices, expansion or shrinking of regional or national demand, etc..

If the size of the market or a favourable geographical location and natural conditions have allowed the early initiation of an efficient modern system of production, processing and marketing this gives a lead on competitors entering the market at a later stage because further development can be based on the production experience acquired and the institutional framework developed.

In my opinion the locational factors which determine the regional competitiveness in modern agro-industrial systems have not had sufficient systematic attention during the conference.

5. Regional agricultural development planning

Most regionalised sector models presented at the Conference concentrate on natural conditions and factor proportions and some also include distances and transportation costs. Too little attention seems to be paid to the linkage and coordination problems which are important for regional development planning and for the implementation of regional development plans.

Planning on the regional level involves many levels of decision making: the national or even supranational level, the regional level and the level of the firms involved in the production, processing and marketing.

On the higher level this requires a coordination of these decisions by a system of regulators like prices, investment aids, quantitative controls, direct income payments, etc., and in socialist countries also by allocation of capital and integrated planning procedures.

How can such systems of regulators be incorporated in regional sector models? How can the different levels of decision making with their different instruments and different goal structures be incorporated? How can regional development objectives be introduced? During the conference we have seen some interesting approaches and heard interesting discussions of the various aspects. (i.a. Schiefer, Group A1); Hirs and Csaki, Group A1; Zvincek and Budin, Group A1).

But there still seems to be a long way to go in the development of models which can be of practical use for the coordination of decisions at various levels according to national or supranational policy objectives, or which, at least, can provide reliable information concerning the effects of alternative policies on the achievement of these objectives. Many of the models presented have the character of feasibility studies indicating which development would be technically attainable rather than indicating how regional development could be planned, implemented and coordinated.

An analysis of the efficiency of direct and indirect energy consumption of various farming systems (van Hecke, Group A3) and regional agricultural development plans (Fekete, Benet and Sebestyén, Group A3 and Csete, Harnos and Lang, Group A3) is useful for assessing the sensitivity for increasing energy prices. Energy analysis can be considered indispensable for the planning of future development.

Models which besides agricultural production and income objectives also take into consideration objectives concerning protection of the environment, preservation of unique ecological systems and valuable natural variation, maintenance of rural scenery etc. have not been reported during the conference except for some Hungarian models, in particular Csete, Harnos and Lang, (Group A3). Such models could be helpful for the planning and management of natural parks and the development of multi-objective rural land use plans, particularly if farming systems have to be adjusted to requirements with regard to the avoidance of negative external effects (pollution, ecological damage) and the achievement of positive external effects (preservation of nature, recreational amenities, etc.).

The construction of such multi-objective land use models requires a multi-disciplinary approach in order to assess and quantify the interrelationships between the various objectives and also are necessary for cost benefit analysis of alternative plans. An historical analysis of regional technical, economic and social developments can be useful for the design of such plans (Coujard, Group A6).

6. Interdependent regional development

One of the topics of the discussions in which I participated was the question whether there is a connection between a high level and a rapid rate of development in core regions and the underdevelopment of peripheric regions. This discussion arose from the analysis by Van Dijk, Roessing and Bos (Group A4) of the determinants of the international cereal trade in the 17th century between the Dutch Republic and the Baltic, and the economic and social developments in the various parts of Europe 9). This interdependency of development and underdevelopment is the central hypothesis of development theories like the interdependentia theories developed in Latin America (Frank, 1967), the theory of unequal exchange (Amin, 1974) and the theory about the development of the capitalist world system by Wallerstein (1974 and 1979) 10).

It is also a concept that has been applied in recent regional development theories by a.o. Friedman and Douglas (1978); Friedman and Weaver, 1979) and Carey et al. (1980). I think that it would be interesting and worthwhile to elaborate this hypothesis for the analysis of divergencies in regional agricultural developments and the

impact of agricultural policies on regional development.

An interdependency of regional agricultural developments also arises if a constraint is imposed on the aggregate agricultural development like a constraint on the total volume of production or on the budgetary expenditures available for surplus disposal as is relevant for the European community.

Expansion of agricultural production capacity in one region then will be at the cost of a slower development or a reduction of the production capacity in other regions. The problems which have been discussed in this context are the cost and benefits of a regional reallocation of production in accordance with the objectives of a more balanced regional distribution of income and employment and the feasibility of various policies aimed at this objective. As Weinschenck and Kemper (main paper) pointed out, the pursuit of these objectives by investment aids or other financial supports probably will be selfdefeating as it would result in a general lowering of prices and the marginalisation of other less favoured regions. Quantitative restrictions on regional production with the help of a quota system or administrative controls on the use of yield increasing inputs seem to be the only though quite unattractive possibility. The development of agriculture does not seem to be an appropriate tool for regional development policy. However, in many underprivileged regions the development of other industries or sources of employment and income will be even more difficult. If there are strong political and social considerations for sustaining regional population there is often little alternative beyond the promotion of agriculture whereas the share of these regions in the total production is small.

Some of the analyses reported during the congress concerned the capacity of agriculture to sustain a local economy taking into account the linkages with other economic sectors. Input-output analysis is an appropriate tool for such an analysis as it provides a quantitative description of the links with the other sectors and the total volume of employment and income generated by agriculture. In the regional sciences this technique is employed in the framework of growth pole and growth centre theories to assess the total income and employment to be expected from the development of an industry or to estimate its propulsive capacity. (Perroux, 1950; Isard, 1956 and Kuklinski, 1972).

The main objections to this approach, i.e. its static character, its neglect of economies of scale and of substitution possibilities and the high level of aggregation, are well-known. Input-output analysis moreover works in economic space as it deals with interindustrial relationships and this poses the problem of the transposition of economic space into geographical space (Friedman and Weaver, 1979) 12).

This involves either great efforts in the collection of specific local data by surveys concerning the connections between local firms and the purchases of local consumers. (Rabinowicz, Group A2) or the use of rather rough approximations (Thomson and Whitby. Group A2).

The regional input-output analysis made in Sweden and the U.K. indicate that the contribution of agriculture in sustaining the regional economy is rather limited. But this depends strongly on the type of agriculture, the size of the region and the organisation of agricultural industries. By concentrating on special products, e.g. health foods, the use of small scale processing technology and the development of specialised marketing outlets the capacity of agriculture to sustain the local economy can be increased. However the demand for this type of agricultural products will probably be limited.

7. Agricultural policy and regional development

If a constraint on total agricultural output and the difficulty involved in the geographical reallocation of agricultural production leave little room for regional development policies aiming at expansion of agricultural production this is an additional reason for a critical examination of the regional impact of agricultural policies.

Agricultural market and price policy is primarily a sectoral policy which aims at influencing sectoral income distribution. However, because of the coincidence between the share of agriculture in regional income and employment and the level of income and economic development agricultural policy also has an equalising influence on regional income disparity. At the introduction of agricultural protection in Western Europe at the end of the 19th century regional income objectives have been an important consideration 12).

The prevention of migration from the rural areas to the cities at a more rapid rate than could be absorbed by the expansion of the manufacturing industry has been a strong motive for the initiation of agricultural protection in Western Europe and this is still so in

the developing countries. Even at the start of the Common Market about 20 year ago the mitigation of the social and political problems arising from an acceleration of the rate of structural transformation of the sectoral and geographical distribution of economic activity under the pressure of a long-term income depression in agriculture and in rural areas has been an important consideration and it still is in the present situation (Heidhues, 1976).

The underlying principle of the agricultural market and price policy of the EC and of most other countries still is that a stabilization of the prices of the major land-based agricultural enterprises at an adequate level suffices for the maintenance of an acceptable level of agricultural income. In the EC the basis of this policy is increasingly undermined by the emergence of surplus production of the protected products. Also the equalising impact of the agricultural market and price policy on regional income distribution has probably been diminishing. Because of the increased importance of infrastructures and scale economies as determinants of regional competitiveness in agriculture (section 3) the price policy may even tend to favour the agricultural sectors in the agriculturally more favoured and economically more advanced regions which generally have expanded their market shares (see the RICAP-study: EC, 1981). Policies to prevent a further expansion of production moreover will probably have the effect of stabilizing present regional market shares and impeding the exploitation of potential comparative advantages in agriculture by the economically less developed regions.

In my opinion we should have a closer look at the dynamic effects of price stability and income protection as provided by the agricultural market and price policy in combination with the effects of national structural policies, fiscal policies, etc.. It could well be that these generate a development of regional market shares which runs counter to objectives of regional development policy. The analysis of the distributive effects of specific market regulations (e.g. sugar; Schmitz, Group A4) and other agricultural policy measures (e.g. direct income payments in less favoured areas; Peters and Langbehn, Group B1) are important for the evaluation of agricultural policy and could lead to a better adjustment of this policy to regional development and income distribution objectives.

The orientation of the agricultural market and price policy on a few products which occupy by far the major share of the total cultivated area in the EC and also are typically temperate zone products also induces a regional bias. The CAP is much less effective in the protection of agricultural income of the Mediterranean regions than of the economically more developed Northern regions.

The coincidence of a relatively high share of agriculture in regional income and employment and a relatively high level of economic development is furthermore more relevant within countries than internationally. Within the EC regional income disparity coincides strongly with national income differences (see section 1) and a relatively low level of national income does not coincide with high agricultural exports. This is a reason to analyse the impact of international income transfers involved in the conduct of the common agricultural market and price policy also with a view on regional income distribution (Tarditi, Group A1).

The development of data banks in order to improve the availability and accessibility of data for comparative analysis is an important condition for the analysis of regional development problems particularly within a supranational political and economic community like the EC (Jacobs and Strijker, Group A3). Multivariate-analysis can be used for the classification of regions according to their agricultural and developmental characteristics as a basis for analysis of the regional impact of agricultural policies, the construction of regionalised sector models and the implementation of regional development policies. (Dvergsdahl, Group A2; Lange, Group A2; Bonnieux and Rainelli, Group A2; Albisu, Group A1).

A further elaboration of multivariate analysis approaches in order to identify patterns of regional development and to obtain indications about the underlying causal relationship may be worthwhile.

NOTES

- 1) For an analysis of the links between race, ethnic consciousness and social conflict see i.a. part II of Wallerstein (1979)
- 2) In the Soviet Union there are also considerable differences in regional income (Mc. Huley, 1979: 128 and Ellman, 1981). This is of course not amazing considering the large differences in natural conditions and economic development within the Soviet Union.
- 3) Klaassens (1965: 30) devised a two-by-two matrix to classify regions according to the level and growth rate of income. The regions with a relatively low rate of increase of income compared with the national rate were subdivided into "distressed areas" with a relatively low level of income and "declining prosperity areas" or "potentially distressed areas" which are faced with a decline of their relative income position. Speaking of less developed and underprivileged regions we refer to the class of "distressed areas" with both a low level and low growth rate of income.
- 4) In the Netherlands in 1975 about 24% of the total income generated in the various branches of industry (excluding services, building industry and natural gas) was derived from the final demand for domestic agricultural and food products (excluding the retail sector) (LEI, 1980: 14).
- 5) According to the study of Minhas (1962) agriculture was among the most capital intensive industries in the USA and among the most labour intensive in Japan. See for a comparison of agriculture in Japan and the USA also Hayami and Ruttan (1971).
- 6) See Gönczi (Group B5); Urban (Group B1); Enyedi (Group A6); Gburczyk (Group A6); Palovics (Group A5) and for Yugoslavia the report presented at the conference by Tomic (1981) and Weinschenck (1979).
- 7) Maintaining a working competition between multinationally and multi-regionally operating more footloose large private firms and co-operatives which are more firmly rooted in the regional economy may not only be important for strengthening the bargaining position of agricultural producers but also could prove to be a more reliable basis for regional agricultural development. The importance of competition within a region has been discussed by Kuhl and Hanf, (Group A4).
- 8) For a discussion of static and dynamic scale economies see Hufbauer (1966).
- 9) The same subject has been discussed by Wallerstein (1974) in his study of the rise of the world capitalist system. See also the paper of Bryden (Group B3).
- 10) For a survey of these theoretical approaches see de Janvry (1975).

- 11) The author expresses his thanks to Roger Teszler of Amsterdam University who discussed this problem in his study on the industrial development of Colombia (forthcoming).
- 12) Although agricultural protection then mainly concerned cereals which were the marketable product of the farms on the more fertile soils and in the more prosperous regions and primarily worked to the advantage of the big land owners (Augé de Laribe, 1930 and Tracy, 1964) it had the indirect effect of sustaining the total agricultural income. A crisis in cereal production tended to extend to the other agricultural enterprises as cereal production on the better soils was reduced in favour of other marketable crops and livestock production which competed with the marketable production of the poorer soils and less favourably located regions.

LITERATURE

- Amin, S. (1974) Accumulation on a world scale: a critique of the theory of underdevelopment (2 vols.), New York, Monthly Review Press.
- Augé de Laribe, M. (1950) La politique agricole de la France de 1880 à 1940, Paris, P.U.F.
- Bergmann, D. (1975) Background thoughts and elements for a discussion on agricultural structures in Europe 1980-1990. European Review of Agricultural Economics, (1974/75) 2.4.
- Boussard, J.M. (1976) The concept of economies of scale in a multi-product industry and its implications for the future of Europe. European Review of Agricultural Economics, (1975/76) 3.1.
- Carey, J., Hudson, R. and Lewis, J. (eds.) 1980) Regions in crisis. New perspectives in European regional theory. London, Croom Helm.
- E.C. (1981) Etude des effets régionaux de la politique agricole commune. Série politique régionale, 21. Brussels, Commission des communautés Européennes.
- Ellman, M.J. (1981) De inkomensverdeling in de Sovjet-Unie. Economisch Statistische Berichten 66 (3319) 812-818.
- Evenson, R. (1967) Contribution of research to production. Journal of Farm Economics, 49:5.
- Frank, A.G. (1967) Capitalism and underdevelopment in Latin America New York, Monthly Review Press.
- Friedman, J., Douglas, M. (1978) Agropolitan development. Oxford, Pergamon Press.
- Friedman, J., Weaver, C. (1979) Territory and function. London, Fletcher and Son.
- Hayami, Y., Ruttan, V.W. (1971) Agricultural Development: an international perspective. Baltimore/London, Johns Hopkins.
- Heidhues, Th. (1976) Price and market policy for agriculture. Food Policy, (1976) 2 : 116-129.
- Hufbauer, G.C. (1966) Synthetic materials and the theory of international trade. London, Gerald Duckworth and Co.

- Isard, W. (1956) Location and space economy: a general theory relating to location, market areas, land use, trade, and urban structure.
Boston, The technology press of MIT and John Wiley & Sons.
- Janvry, A. de (1975) The political economy of rural development in Latin America: an interpretation.
American Journal of Agricultural Economics, 57 (1975) 3 : 490-499.
- Klaassens, L.H. (1965) Area economic and social redevelopment: guidelines for programmes.
Paris, OECD.
- Kuklinski, A. (ed.) (1972) Growth poles and growth centers in regional planning.
The Hague, Mouton.
- LEI (1980) Landbouw-Economisch Bericht 1980.
The Hague, Landbouw-Economisch Instituut.
- Mc. Huley, A. (1979) Economic welfare in the Soviet Union.
Wisconsin, Madison.
- Minhas, B.S. (1962) The homohypallagic production function.
Journal of political economy.
- Molle, W.T.M. (1981) Regionaal beleid in de Europese Gemeenschap.
Economisch Statistische Berichten 66 (3315) : 716-721.
- Myrdal, G. (1957) Economic theory and underdeveloped regions.
London, Gerald Duckworth and Co.
- Perroux, F. (1950) Economic Space. Theory and applications.
Quarterly journal of economics, 64:89-104.
- Scheper, W. (1974) Aussenhandelsstrukturen der Entwicklungsländer: Entwicklungstendenzen und Erklärungshypothesen, in H. Buchholz/W. von Urff (ed)
Schriften der Gesellschaft für Wirtschafts- und Sozialwissenschaften des landbaues e.v., Band XI : 83-100.
- Tomić, D. (ed.) (1981) The agriculture of Yugoslavia.
Belgrade, Society of agricultural economists of Yugoslavia.
- Tracy, M. (1964) Agriculture in Western Europe; crisis and adaptations since 1880.
London, Jonathan Cape.
- Veer, J. de (1979) Pressures on European Agriculture. In M.C. Thomas (ed). Forage Conservation in the 1980's.
Brighton, British Grassland Society.

- Wallerstein, I. (1974) The modern world-system. Capitalist agriculture and the origins of the European world-economy in the sixteenth century.
New York and London Academic Press.
- Wallerstein, I. (1979) The capitalist world-economy.
Cambridge (Paris, Cambridge University Press/
Editions de la maison des sciences de l'homme.
- Weinschenck, G. (1979) Development problems of the agricultural sector in labour-managed market economies: The case of Yugoslavia.
European Review of Agricultural Economics, 6 (4).