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NONDISTORTING AGRICULTURAL INCOME SUPPORT:

SOME REFLECTIONS ON THE DISCUSSION IN WEST GERMANY

by

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1. The Discussion on Nondistorting Income Support and Decoupling

Agricultural market and price policies, such as the Common Agricultural Policy (CAP) employed within the EC, basically establish a system of international and intersectoral income transfers. These income transfers from the nonfarm to the farm sector take many different forms, the most important of these being indirect transfers, also referred to as "invisible transfers," since consumers are forced to pay higher than world market contract prices for agricultural products.

According to this view, market and price policies could be regarded as a specific type of income policy. Despite the fact that this special income policy has been employed for a long time, it hasn't really succeeded in solving the original and persistent problem, which is the removal or at least the alleviation of income disparity between the farm and the nonfarm sector (for a different interpretation see, Schmitt and Gebauer, 1987).

Today, even more than in the past, these policies cause not only enormous output enhancing effects and high budget costs for storage and inferior use of surplus products, they also create international trade distortions and, to an increasing extent, environmental damages.

Consequently, in the seventies a broad discussion started on the problem of reorganizing the transfer of income from the nonfarm to the farm sector. The continuing debate gave rise to a wide variety of proposals focusing on a switch from price support policy to direct income transfer programs. These are viewed as being able to dissolve ("decouple") the connection between the level of price support and further production

incentives. As a result most of the proposals in the seventies intended a severe reduction of price support. For this reason most proposals only provide a basis for discussion and are never considered to be alternatives to the present system.

Agricultural policy makers nowadays rely increasingly on direct payments to complement and supplement current price support. Because the demand for agricultural products (at least in developed countries) stagnates and the supply still increases (due to technical progress and the level of price support), concepts aimed at decoupling income support from price and production incentives are increasingly attractive to farm policy makers (see also Runge and Halbach, 1987, p. 7).

As past experience reveals, a system of indirect transfers such as the CAP is difficult to manage and is, therefore, less efficient. The present system has frequently been criticized because of its diminishing impact on the level of income to farm households (Koester and Nuppenau, 1987). Direct income transfer schemes--substituting the present market and price policies--might provide at least the chance to tackle the most pressing problems of overproduction, low incomes, international trade distortions, and environmental damages in a more straightforward and successful manner.

These (a priori) assessments largely correspond to the results of comparisons between various systems of income support to farm households based on theoretical considerations. The direct income transfer payment system, without any links to current production, turns out to be the one with the largest welfare gains and increases in gross national product (for details see Rodemer, 1980; Wille, 1976).

This paper, therefore, focuses primarily on direct income transfers to farm holdings/households starting with a classification and definition of income transfers in Section 2. A description of the various income transfer programs currently employed in the Federal Republic of Germany is given in Section 3. Section 4 describes the basic characteristics of the current schemes that have been proposed by agricultural economists, politicians and/or official institutions. An assessment of these concepts is attempted by referring to the allocation of resources, the distribution of income, budget costs, etc. Remarks on the limits and principles of a system of direct income transfer payments will conclude the paper.

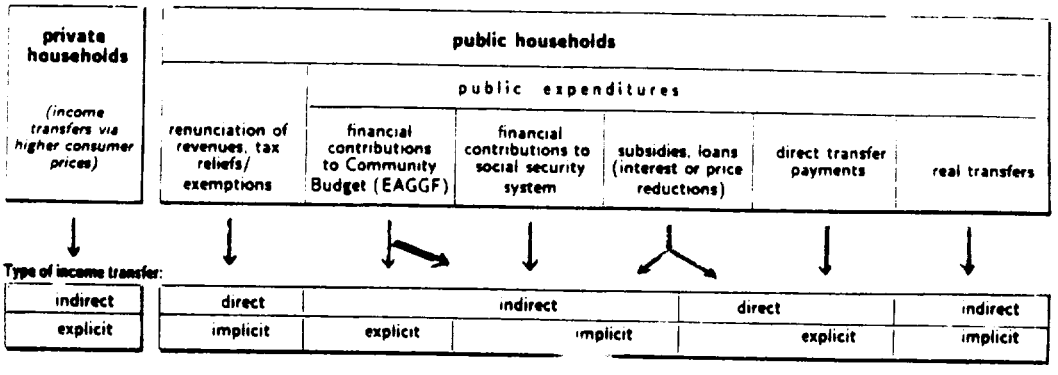
2. Income Transfers: Classification, Definition, and Objectives

In reviewing the literature on transfer payments it is remarkable that very little work has been carried out concerning a systematic registration and classification of income transfers to farm households. Following the diagnosis put forward in the first section, that agricultural policy nowadays reduces to a specific type of income policy, the need for and the advantage of a categorization scheme of income transfers becomes evident. Figure 1 attempts to present an overview of main sources and types of positive income transfers favorable to farm households/farm holdings. Negative income transfers, e.g., personal taxes, are not taken into consideration in this paper.

Positive income transfers are divided into direct and indirect transfers according to whether the recipient gets the income transfer directly from public/private households or not. Direct and indirect transfers are further divided into monetary (explicit) and non-monetary (implicit) transfers. Tax

exemptions, for example, are positive, direct and implicit transfers without any actual payments.

Figure 1. Positive Income Transfers to Farm Households/Holdings.



Within the paper the term direct income transfers refers to explicit transfers provided by public budgetary funds, for all or a specific group of agricultural holdings or farm households, with or without any conditions or stipulations concerning the use of the benefits, in order to improve or to maintain the level of disposable/gross income of farm households (see Weinschenck, 1973; Wille, 1976, p. 43).

As seen in Figure 1, direct and explicit income transfers represent only a small fraction of all income transfers. Although direct transfers are of increasing importance, indirect income transfers and real transfers account for the bulk of the total volume. Neglecting the so-called "invisible" transfers via higher consumer prices, the total volume of income transfers, for example, within the Federal Republic of Germany, amounts to approximately 15.35 (11.26) billion German Mark (DM) in 1982 (1973). These figures roughly correspond to DM 12,000 (6,400) per

agricultural worker (working unit) and DM 19,000 (10,100) per farm holding on average in 1982 (1973) (Thoenes, 1985, pp. 145-149).

Direct income transfers currently available to farm holdings/households result from two main sources: (a) they are linked to the farm holding and represent subsidies, for example, for diesel fuel, for continuing to farm in less-favored areas such as hills and mountain regions, for keeping beef cattle or sheep, etc., or (b) they are deficiency-type payments to compensate for the difference between market and guaranteed level of prices to producers. Another category covers transfer payments which are available to farmers who cease (parts of) agricultural production or to young farmers who start farming. This category of transfer payments also includes allowances given to small-sized farmers in order to lower the financial burden of membership rates to the social security system. Generally, these transfers are more directly linked to the personal situation. Nevertheless, it is extremely difficult to establish a careful and meaningful differentiation according to whether the farm holding or the farm household represents the original transfer unit. In most cases entitlement to transfer payments links criteria related to both the farm operator/household and the farm holding.

The literature on direct income transfers provides a number of classifications based on the valuation for calculating the amount of benefits and their adjustment. Transfers linked to the farm enterprise can refer to parts or to total agricultural output, to factor input (land, labor, capital, purchased inputs), and to farm profits in the current year or during a base period. Transfers paid according to the volume of current production, work like an increase in marginal revenues for the products in

question and cause the same effects as an increase in prices. On the other hand, transfer payments related to a base period do not affect product or factor specific marginal revenues; these are sometimes called "production-neutral transfers." Although they have no direct effect on production and factor input decisions, they might influence the decisions on capital investment and employment (farm and nonfarm working decisions) because of an increase in liquidity and the level of disposable income (Henrichsmeyer, et al., 1981, p. 22f).[1] Transfer payments linked to the farm household refer mostly to total income of the household or of the farm operator (couple). In that case they are "income-tested" programs; this category of transfer scheme could be labeled personal income transfers. Some authors also use this term in case the basis for calculating the amount of benefits will not be adjusted or when it refers to a base period which ignores further changes in total output, input or farm profits.

In referring to the objectives and policy implications of transfer schemes some authors distinguish among them according to their anticipated/proposed impact on the level and distribution of income. Some transfer schemes attempt a full compensation of income losses, others just guarantee a minimum level of income or even attempt to change the income distribution in favor of low income groups.

Irrespective of the conceptual problems and the terminology used by different authors, any designation of transfer programs should focus on the specific design of the transfer scheme. Their allocative and distributional impacts depend mainly on these arrangements. In addition, any attempt to reform price supports by introducing a "system" of direct

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[1]See also Section 4.2.1.

income transfer payments should also pay attention to the fact that indirect and direct (explicit and implicit) transfers have to be jointly evaluated. The whole system of income transfers must be examined in order to have an adequate basis to discuss consequences with respect to the allocation of resources and the level and distribution of income.

3. Selected Direct Income Transfer Programs Currently Applied in the Federal Republic of Germany

In the Federal Republic of Germany direct income transfers are employed in various fields. The transfer schemes currently implemented are not based on the idea of creating a uniform system of direct income support for farm households; in most cases these schemes reflect some ad hoc adjustments according to actual political constellations and particular purposes.

The first broad experience with direct income transfers in the Federal Republic of Germany dates back to 1970-71. Farmers received a compensation for reducing the price support level for cereals after the German Mark was revaluated. The compensatory payments given to farmers were digressive, limited to four years and primarily linked to the agricultural area used. The total amount of benefits spent for 850,000 farm holdings summed up to 302 million DM.

Some of the transfer schemes currently applied in the Federal Republic of Germany are co-financed by the Community Budget (EAGGF-Guidance section) for example, the transfer program for the less-favored areas. However, the bulk of direct income transfers is financed by the Federal Budget and the budgets of the regional governments--the so-called Federal "Laender."

Recently almost all Federal "Laender" have established a wide variety of programs for environmental protection purposes; they intend to compensate farmers for reducing the input of fertilizers and/or pesticides on certain areas of arable land, permanent pastures and meadows. The amount of benefits paid varies between 100 to 600 DM per hectare (the average is 300-400 DM).[2] These schemes are not included in Table 1. For this reason, the transfer schemes represented in Table 1 account for only a small fraction of the whole variety of programs currently employed. These transfers are available to farmers throughout the Federal Republic of Germany, with the exception of the "Fallow-Scheme," a large scale experiment conducted in Lower Saxony. The schemes listed in Table 1 were selected because they have some of the basic characteristics of the different designs and arrangements of the direct income transfer programs.

Besides these schemes there are a large number of additional transfer programs providing explicit or implicit transfers, for example, a subsidy on diesel fuel (647 million DM in 1986), settlement benefits for young farmers (22 million DM in 1986), interest reductions within a "general farm credit scheme," increase of the VAT for agricultural products to compensate for the removal of the positive monetary compensatory amount (2.7 billion DM in 1986), and up to 18.4 billion DM during the period of 1984 to 1991 (Agrarbericht, 1987, p. 64).

The transfer schemes currently employed reveal no unique direction of objectives. On the one hand, transfer schemes provide support to farmers running small-sized farm holdings, on the other hand, they provide numerous incentives to give up small-sized farming. The various schemes

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[2]Quite a number of these programs are listed in ASG (1986).

remain particularistic, and there is no evidence of how to solve the principal problem of the CAP, which is to reduce over-production by accepting market realities.

Table 1. Selected Income Transfer Schemes Currently Applied in the Federal Republic of Germany

Transfer scheme:	Social Security Membership Rate Exemptions *SVBEG; 3.ASEG*	Fallow Scheme *Grunbrache-Programm*	Compensation of Permanent Natural Handicaps *Ausgleichszulage*	Cessation of Milk-production *Milchrente*	Benefits for small-sized grain producers *Kleinerzeugerbeihilfe*
purpose	reduction of membership rates to the social security system for small farmers	aid for leave fallow arable land	financial aid for the continuation of farming in less favoured areas	income compensation for cessation of milk production	compensation for small farmers due to the introduction of a producer co-responsibility for cereals
Year of legislation	1986	1984	1975	1984-1986	1986
Design of the transfer scheme					
- type	income-tested	non-income-tested	income-tested	non-income-tested	non-income-tested
- transfer unit	farm operator couple	farm holding area of arable land	farm holding (livestock-units (LU); agricultural area utilised (AA))	farm holding (total milk production during a base period)	farm holding (AA used for the production of cereals)
- transfer rate	benefits graded according to total income per year: DM 300 - 900 (3.ASEG); DM 1100 SVBEG; annual payment	1000 - 1600 DM per hectar; annual payment	max. 286 DM per LU/ hectares AA; annual payment	700 - 1000 DM per 1000kg milk; annuity (7, 10 years) or lump sum	12.90 DM per ton; annual payment
- benefits ceiling	2000 DM	de facto	12000 (18000) DM	150000 DM	322.50 DM
- duration	unlimited	4 years	unlimited	(unlimited)	(unlimited)
- eligibility (entitlement)	farm income capacity less than 30000 DM or less than 43350 DM (including non-farm income (1987)	minimum size of the farm holding: 3 hectares; enrolled area of arable land: - min: 1 hectare; - max: 20 (33)% of total arable land or 20(35) hectares	minimum size of the farm holdings: 3 hectares	definitively abandoning of milk production	AA used for cereals less than 15 hectares
- conditions		fallowed area has to be planted, and must not used for spreading organic manure and for fodder-purposes	continuation of farming for at least 5 years		
Total budget costs (in mio. DM; 1986)	277 - 330	35.21	596 (1987)	167.2	36
Recipients (actual; 1986)	356240	7700	228500(1987)	35000 (1984-1987)	n.a.
Average amount of benefits per recipient (1986)	2000 DM (small-sized farmholding)	4570 DM	2400 DM (1987)	n.a.	n.a.

4. Direct Income Transfer Programs: A Review of Proposed Schemes

4.1. Characterization

The transfer schemes reviewed in this section represent proposals put forward by agricultural economists, the Federal Ministry of Agriculture and the EC Commission. They are very heterogeneous with respect to the objectives, the fields of application, and the instrumental design. Table 2 summarizes and stresses the main characteristics of these proposals with

the aid of a synoptic presentation. The table indicates that several schemes were proposed in the seventies, most of them referring to the farm holding: the basis of valuation being parts of, or total agricultural output or factor input. Usually, these schemes were not income-tested, that is, benefits were granted without taking total household income into account. Because the calculation of transfers refers to a base period, and the entitlement to benefits is restricted to farm operators running a farm enterprise at the time of a system change, these schemes were often labeled personal income transfer programs.

Income-tested transfer schemes (e.g., SSR-1-2), on the other hand, are designed to supplement the present system of price support (with the exception of the MIG-scheme) and to correct for increasing intra-sectoral income-disparities.

At present another group of direct income transfer payments attracts a lot of attention--set-aside and fallow-schemes, some of them in combination with retirement schemes, which are available to farmers older than 55 years (SSR-3; MRP-scheme). These schemes have been proposed just recently. They reflect on the worsening situation of agricultural markets and on dramatically increasing budget expenditures. Participating farmers are supposed to close down agricultural production and to put land to set-aside. On the EC-level, however, these schemes do not meet with general approval. Therefore, it is likely that set-aside schemes and retirement schemes, with no or minor stipulations on land use, will be implemented separately.

The following sections discuss some of the implications of the programs listed in Tables 1 and 2: the allocation of resources, the

distribution of income, budgetary aspects, impacts on environmental protection, and administrative problems.

4.2 Assessment

4.2.1 Allocative effects and structural adjustments

Level and structure of agricultural output. The assessment of direct income transfer payments in relation to level and structure (composition) of agricultural output, must consider the following points: first, the reaction of total supply due to reduction of the current price level (price elasticity of supply); second, the changes in the structure of total agricultural supply.

Nearly all types of transfer schemes listed in Table 2 propose a successive reduction of present price support. Successive price reductions, as seen from the recent experience within the EEC, cannot retard further increases in agricultural production. The effects of gradual price reductions will be overcompensated by technical progress and the high marginal productivity of yield increasing inputs; therefore, they are not qualified to significantly reduce market imbalances in the short run. On the other hand, immediate and drastic price reductions, with or without direct transfer payments, cannot refer to any historical and empirical experience; consequently, predictions concerning the development of total supply are very speculative.

Successive price reductions, supplemented by direct transfer payments proportional to total output during an actual or base period, as in the CP, PIT and DCP Schemes, will not provide significant short-term effects on the level of agricultural production. In a study focusing on the milk

Table 2. Proposed Direct Income Transfer Schemes

AUTHORs	ATLANTIC INSTITUTE (1971)	v. RIEMSDIJK (1973)	KOESTER/TANGERMANN (1976)	PRIEBE (1980)	SCHMITT/v.WITZKE (1979)
Proposed scheme (short title)	*Compensatory Payments* (CP)	*Direct Compensatory Payments* (DCP)	*Personal Income Transfers* (PIT)	*Price-Benefit-System* (PBS)	*Minimum Income Guarantee* (MIG)
-purpose	substitution of price support through an income support system			supplementation of the price support system	reset price policy support
-objectives	- improve structural change and allocative efficiency; - intrasectoral income redistribution;	- create conditions to allow for 'parity'-incomes for farmers - social alleviation of adjustment processes	- increase gross national product; - budget relief; - removal of trade distortions; - maintain income position of farmers	- intersectoral income redistribution; - security of food-supply; - environmental protection	removal of allocative and distributional distortions caused by present market and price policy
-instruments complementary measures	transitory, degressive compensatory payments; successive reduction of EEC-price level	direct compensatory payments; reduction of present level of EEC-prices for basis farm products to about 20% (= 110% of 'normalized' world market prices)	compensation of income losses by transfers; successive price reduction in real terms (2 - 2.5% p.a.)	financial assistance proportional to the area of agricultural land utilized; successive price reduction (until market-balance is achieved within the EEC)	income support to ensure a minimum standard of living; successive reduction of prices to 'real' world market price-level
Design of the transfer scheme					
- type	non-income-tested				income-tested
- basis of valuation/ proration	sum of production-units during a basis period	marketable crops + non-marketable crops (excluded: animal products produced by means of purchased feed)	production during a basis period (calculations based on total factor input)	agricultural area utilised	total household income
- transfer rate/ formula	benefits will be calculated using average yields, number and type of product-units, and price reductions (degression according to farm-size; capitalization of benefits subject to the age of farm operator; entitlement continues in case of farm-cooperation)	benefits will be calculated according to total agr. area used for crops (basis period), average physical yield, and reduction of regional producer prices (+5% premium); benefits ceiling: 50% of the wage of a qualified farm worker; transfer payments will be degressive over time;	total income losses will be fixed according to a point-rating system; full compensation of income losses in the first year; in the following years the total amount of benefits depend on the number of 'points'; capitalization of benefits subject to the age of the farm operator	100 - 200 DM per hectare	difference between current household income and minimum level of income will be guaranteed; households with income above this level are entitled to additional benefits up to a certain income level (positive tax threshold), however transfer payments decrease as market-income increase (according to a constant marginal tax rate)
- duration	min.: 5 years; max.: 15 years	20 years	15 - 20 years	unlimited	unlimited
- eligibility	all farmers at the time of system change	farmers less than 65 years at the time of system change; newcomers are entitled to a benefit up to 20% of the normal benefit during the first 3 years	all farmers at the time of system change	optional: limited to dairy farmers; farm holdings in less favoured areas;	low income farm households (principle of subsidiarity); assests/farmland will be neglected up to a certain limit
- conditions			optional: stipulations on land use		
- administration		national authorities	EEC, national authorities	EEC, national authorities	local institutions
- financing	increase in indirect taxes (non-food products); EAGGF	new tax according to the amount spend on food in various income classes	direct tax or difference between consumer prices (unchanged) and lowered producer prices	EAGGF, national budget; producer co-responsibility levy	public assistance; national budget

Table 2. (Continued)

AUTHORs	HAGEDORN / KLARE (1986)	BENDER / BARTLING (1987)	EC COMMISSION (1987)	FEDERAL MINISTRY of AGRICULTURE (1986)
Proposed scheme (short title)	*New Retirement Scheme* (NRS)	*Production-Neutral Transfers* (PNT)	*Proposals on Socio-Structural Reforms: Income Aids* (SSR)	*Market-Relief-Programm* (MRP)
- purpose	supplementation of	substitution of the price support system	supplementation of the price support system	
- objectives	- improvement of structural change; - social justice ; - market relief; - environmental protection;	- improvement of agricultural structure; - security of food supply; - avoidance of 'ruinous' competition;	- market relief; - improvement of structural change;	- market relief; - improvement of competitiveness; - encouragement of non-farm employment - remuneration of ecological services, protection of landscape;
- instruments complementary measures	pre-retirement benefit: use of agricultural areas for ecological purposes; collecting delivery quotas (milk);	compensatory payments related to agricultural area utilized; reduction of price support ('liberalized markets')	compensatory payments according to: 1: common guidelines for financial assistance; 2: guidelines for financial assistance by member states; 3: retirement scheme: - a: set aside of farm land - b: restructuring of farm land restrictive price policy (- 5 to 10% reductions in real terms); producer co-responsibility levy; relaxation of product intervention and price guarantees;	benefits granted to 55 - 65 years old farmers for closing down agricultural production up to a period of 10 years. measures to improve the cultivation of renewable resources (energy crops)
Design of the transfer scheme				
- type	non-income tested	non-income tested	1,2: income-tested; 3: non-income tested	income-tested (non-farm income)
- basis of valuation/ proration	age of the farm operator at the time of introducing the system; number of years paid membership fees	agricultural area utilized during a basis period;	1,2: total income of the farm household; 3: agricultural area utilised; age of the farm operator	agricultural area utilized;
- transfer rate/ formula	increasement of retirement benefits (pension claims) by one third (1985: max. DM 1116 per month; 58 years old farm operator); cessation of farming does not offset pension claim; application not binding; tax exemptions in case of close-down;	217 ECU/hectare of agricultural area utilized (1979) if gross productions lowers by 20% due to the reduction of price support; payments will be calculated using data on the difference between the value of gross production and the total costs of production referring to specialized arable farms (1000 - 5000 farms within the EEC); the amount of benefits will be corrected to account for a differential rent (compensation for farms in less favoured areas)	1: annual payments (5 years; degressive) 2: 3a: basis benefit: 3000 ECU (annual benefit paid up to 10 years or up to 70 years of life; benefits per hectare: 250 ECU (300 ECU for afforested areas); 3b: basis benefit: 3000 ECU (age of the farm operator less than 60); (2500 ECU for farm operators older than 60)	basic payment: retirement benefits + membership rates to social security system (1987: DM 12500); additional benefit is proportional to total area of agricultural land set aside (and productivity of land): DM 200 - 600 per hectare; no benefit ceiling; non-farm income exceeding the basic sum twice will reduce transfer payment; non-agricultural use of areas set aside is allowed and will not offset benefit claim; add. benefits for abandoning milk production according to delivery quota;
- duration	unlimited (30 years)	unlimited	1: 5 years; 3: 10 years	15 years (period of application: 5 years)
- eligibility	farm operator pensionable age: 58 - 65; right to opt for the pension: 35 - 65 years of life;	all farms	1: full-time farmers, total income per working unit less than 125% of average regional income level or less than 100% of average national income; 'viability' after 5 years; 2: total income per working unit less than 100% of average regional income (90% of average national income); 3: full-time farmers and hired farm-workers older than 55 years; cessation of farming; use of agricultural area: a) non-agricultural purposes (fallow; afforesting); b) restructuring (land leased to 'viable' farm holdings;)	55 - 65 years old farmers; definitively cessation of farming up to 10 years; milk delivery quotas are collected;
- conditions	possibly: stipulations on land use (set aside, fallow, ecological uses)			maintenance of set aside areas
- administration	social security adminstration	scope of application: EEC	EEC, member states	social security adminstration
- financing	federal budget, membership contributions	poll tax	1: EAGGF co-financed; 2: member states; 3: EAGGF co-financed	Federal budget; co-financing

market, Hanf and Koester (1980, p. 120) ascertain that a reduction of the producer price of milk by about 20 percent is necessary to definitively stop further increases of the quantity of milk produced.

Short-term market relief on sub-markets, such as milk and cereals, could be attained by employing set-aside or cessation-schemes and fallow programs. However, when participation is voluntary, and there are no (or minor) stipulations concerning the size and the use of the enrolled area, as intended by the proposals of the EC Commission (Agra Europe, 1988) and the set-aside programs employed in the United States of America (see Boeckenhoff, et al., 1985), the reduction of total supply will be of minor importance. Experience in the U.S.A. and the preliminary results of the fallow scheme employed in Lower Saxony (F.R.G.) show that the enrolled land is less productive and located in unfavorable areas. Although short-term market relief may be achieved to some extent, these programs are very expensive to operate in the long run, especially if they are not accompanied by any reduction in the level of price support. They force a gradual increase in the quantity of land to be put in set-aside in order to compensate for ongoing technical progress. They also encourage the use of special "land-saving" technologies due to a rise in the opportunity costs of land compared to other factor prices. This could cause a further increase in the intensity of land use with quite obvious effects on the overall level of production (de Haen and Thoroe, 1987; Henze, 1985; Boeckenhoff, et al., 1985; Schmitt and Thoroe, 1986).

The compensatory allowances granted to farmers in less favored areas have an effect on the overall level of agricultural output, too. The scheme currently implemented includes a benefit ceiling (see Table 1) which

encourages farmers to complete their resources, e.g., a certain number of livestock units, in order to claim the maximum amount of benefits. Principally, these benefits strengthen the competitiveness of farm holdings in areas which normally have to close down farming. On the other hand, they might help to reduce regional imbalances which are regarded as an important objective of regional policy.

Roughly the same effects will be caused by income transfers which are related to fixed factors such as land. They act like a reduction of fixed costs. The long-term lowest price limit will drop and farm holdings will remain competitive because of a lowered break-even point, even when there is a substantial reduction in the level of price support. If the amount of benefit is proportional to the total area of agricultural land utilized (the PBS- and PNT-Schemes), the "disparity" between different sizes and types of farm holdings will be aggravated. In the long-run, transfer payments related to fixed factors are not production-neutral since they will influence the total number of farms maintaining agricultural production.

Retirement schemes, like the SSR[3]- and MRP-Schemes, are de facto limited to small-sized farmers; they provide a basic payment which implies a declining amount of benefits per unit, e.g., hectare of agricultural area set-aside. In case participants are forced to set aside, to reforest or to leave fallow land, there might be a small reduction in total supply.[3]

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[3]If the MRP-Scheme, as proposed by the Federal Ministry of Agriculture, is applied throughout the EEC and if approximately 8.5 percent of all farm holdings participate, the estimated effect on reduction of agricultural output during a 5-year period will amount to 10 million tons of cereals and 6.6 million tons of milk (about 6.5 percent of total grain [milk] production in 1985-86 within the EEC); see Buehner and Gocht (1987).

However, total agricultural output would probably remain unchanged if land could be leased to other "viable" farms.

Only minor impact on total supply will be caused by transfer schemes providing payments to farm households in order to maintain a certain level of income or to improve the level of disposable income (SSR, 2).[4] Possibly the strongest effect in the long run will be caused by applying the MIG-Scheme, since income transfers are only available to farm households below a certain minimum income level. Incentives on production are very unlikely because all farms are confronted with successively reduced price support; this will certainly lead to long-term reductions in total supply. The proportion of low income farms will depend on the amount and period of reducing the level of price support, the mobility of labor, and off-farm job opportunities.

Changes in the structure of total agricultural supply caused by the introduction of a system of direct income transfer payments are difficult to predict. In cases where transfer payments are linked to the area of agricultural land utilized, they will raise the relative competitiveness of the branches of agricultural production requiring land (PBS, PNT Schemes). Roughly the same applies to transfer payments related to total marketable crops (DCP System).

Level and structure of factor input. Almost all schemes documented in Table 2 rely on successive reductions of product prices as a complementary measure. Generally, product price reductions tend to lower the value marginal product of a specific factor and consequently total factor input.

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[4]The membership rate exemptions for the social security system provided for low income farm households could also be subsumed into this category of transfer schemes.

Whether price reductions cause reductions of factor input remains one of the undecided problems within the "scientific community of agricultural economists." Many agricultural economists argue that compensation payments may influence labor supply and investment decisions and evoke counterproductive, reallocative effects (see Hanf and Koester, 1980, p. 122-150; Hansmeyer, 1963, p. 48).

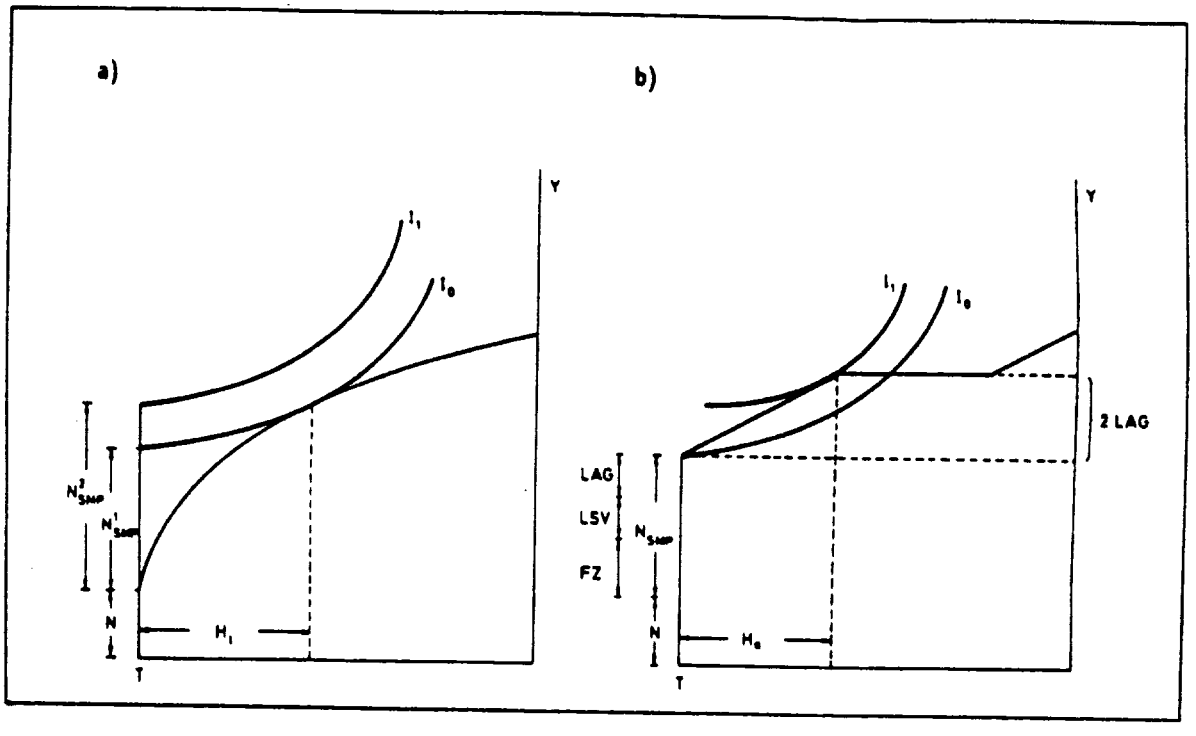
Using the traditional static labor-leisure/income model, Figure 2 illustrates the work-leisure decisions of farm households entitled to transfer payments, according to the MRP Scheme. Farmers 55 years of age, who close-down farming completely for at least 10 years, can claim an additional unearned income. The total amount of transfer payments N_{SMP} consists of:

1. The retirement benefit (basic payment) LAG,
2. Refunded membership fees to the agricultural security system (LSV), and
3. An average premium varying according to land productivity and area of agricultural land utilized (FZ).

Figure 2(a) depicts the decision of a farm household using H_1 hours, out of a total of T hours available for work and/or leisure, for on-farm work. The additional unearned income provided by the MRP Scheme must exceed N^1_{SMP} to make the farm household better off (as indicated by the indifference curve I_1). If the amount of benefits equals just N^1_{SMP}, the farm household is obviously indifferent about continuing or closing down farming.

Figure 2(b) focuses on the off-farm labor decision of a farm household already participating in the program. Earned income resulting from off-farm work (H_a) will reduce transfer payments if the amount of income is double the LAG basic payment. This specific design of the transfer scheme

Figure 2. Labor Supply Decisions of Farm Households Participating in the MRP Scheme



will result in a kinked budget line. According to Figure 2, the indifference curve I_1 illustrates the best attainable utility level of a farm household starting or continuing off-farm employment (for further details see Gebauer, 1988, pp. 49-51).

Empirical evidence on the problem of "biased" investment decisions by farm households because of transfer payments is provided in a recent study. It shows significant differences, in the structure and amount of capital investments, between farms in less favored areas claiming compensatory allowances and those farms which do not claim such allowances (see Klaiber, 1987). Capital investment decisions might also be influenced by income

aids provided according to the SSR proposals. Generally speaking, the more farm households/farm holdings are entitled to transfer payments--and the higher the benefit per recipient--and the greater the income loss being (over)-compensated, the less impact there is on factor mobility. Therefore again, the most serious effect on the reduction of total factor input in agriculture will probably be attained by implementing the MIG Scheme.[5]

Transfer schemes providing benefits which are related to the total area of agricultural land (PBS and PNT Schemes, compensatory payments to less-favored areas) tend to keep more land in agricultural production than otherwise. The opposite effect will be attained by set-aside programs which primarily produce short-term market relief. In the long run, however, it is far more sensible to reduce total labor input rather than the input of land.[6] The incentives provided by retirement schemes (NRS; SSR3b) with no or minor stipulations on land use turn out to be the most efficient in the long run regarding the level and structure of factor input.

These comments are directly linked to the impacts on structural change and adjustment. The effects on structural change, according to the

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[5]Income transfer schemes intending a full compensation of income losses will result in an over-compensation of income losses very quickly if they do not take into account the reallocation of factors and adjustment processes within an individual farm holding. In the long run one-quarter to one-third of the original income losses will be compensated by these adjustment processes (see Hanf and Koester, 1980, pp. 104-105).

[6]"General considerations on resource allocation lead to the conclusion that it would be advantageous to reduce the input of those production factors which can be profitably transferred to other sectors of the economy. Among the agricultural production factors these are mainly industrial intermediate inputs, capital and those members of the labor force which have alternative employment opportunities" (Henrichsmeyer and Ostermeyer-Schloeder, 1987).

schemes proposed by the Atlantic Institute, Koester and Tangermann, and v.Riemsdijk--sometimes designated as "personal income transfer" schemes--depend upon: the reduction of farm holdings during the period of validity (15-20 years), the number of farms realizing the opportunity of capitalizing the benefits, and the current relation between farms entitled to benefits and farm holdings not entitled to benefits. The recipient ceiling scheduled by the transfer systems will create sharp distinctions between farms with respect to their capability for capital investments, and buying or leasing land (Henrichsmeyer, et al., 1981, p. 25).

Structural change will probably be delayed by introducing income aids according to the proposals made by the EC Commission; the same holds true for the payments available to small-sized farm holdings to lower the membership rates to the social security system.

The retirement scheme (NRS) and the MIG program might provide fairly strong incentives for structural adjustment while the MRP Scheme would probably retard structural change due to land being diverted to non-agricultural uses for a 10-year-period (Hagedorn and Klare, 1987). This may lead to an increase in land prices and rents and impede the growth process of individual farms.

Effects caused by transfer payments proportional to the area of agricultural land will be ambiguous; likewise, if there is no benefit ceiling and/or a digressive transfer formula, intrasectoral disparities (PNT Scheme) will be aggravated. However, restricting the entitlement to benefits to farm holdings in less favored areas, the process of an optimal interregional allocation of resources will slow down.

4.2.2 Distributional effects

One of the principal aims of direct income transfer payments is to maintain (or to improve) the level of disposable income of low-income farm households. Nevertheless, most of the transfer schemes currently implemented or proposed do not refer to the personal income position (e.g., total income of the household), rather they are linked to total agricultural output or to factor input. Thus, most of the schemes affect the level and distribution of personal income indirectly via changes in the structure of factor ownership and level of functional income.

Functional income distribution. Transfer payments directly related to a specific factor tend to be capitalized in this factor and to increase its price. (These effects, especially in the case of agricultural land, will be partly offset by a reduction of product price support which will result in a decrease of land prices and affect the distribution of wealth.) The most evident impact on functional incomes will be caused by transfer schemes related to the area of agricultural land being utilized. Transfer payments related to input of land will certainly raise the price for buying or leasing land (PBS, PNT Schemes); see also Ruttan (1986) and Runge and Halbach (1987).

Set-aside schemes and retirement programs (for any non-agricultural use of the land released) might also cause an increase in the price of farm land remaining in agricultural production, while the market value of the diverted land may decline, causing a reduction in both the value of assets and credit lines (de Haen and Thoroe, 1987). These schemes will make farm growth more difficult and will result in an impediment to further structural change. Especially under the prevailing conditions in Germany,

land is a scarce resource with high marginal productivity for agricultural use and fairly limited opportunities for other uses. Therefore, set-aside schemes tend to raise the costs of agricultural production and delay structural adjustments (de Haen and Thoroe, 1987).

The level and distribution of personal income remain largely unchanged if the amount of benefits is of minor importance compared to the total household income. Therefore, the income aids provided according to the proposals of the EC Commission as well as the membership rate exemptions will have little impact on personal income distribution. Fairly strong impacts on personal and intrasectoral income distribution will be caused by applying the CP-, PIT-, and DCP-System. This is because of a recipient's ceiling which creates a sharp distinction between the group of households depending solely on income from agricultural activities and the group claiming additional benefits. Further, within these schemes an overcompensation of income losses is very likely if the transfer rate is not corrected according to adjustment capabilities which vary significantly between different farm sizes. Therefore, these schemes might aggravate intra-sectoral income disparities.

The MIG Scheme, which is designed like a negative income tax system (see OECD, 1974), will reduce income differences and improve the income position of farm households with low or even negative income from agriculture. An improvement in the income position of small-sized farmers might also be achieved by applying the NRS or the MRP Scheme. The MRP Scheme schedules a basic payment; additional transfers are related to total area of agricultural land set-aside. This transfer formula implies a regressive tariff in the way that the average payment per unit (e.g., land)

will decline with an increase in the amount of land diverted to non-agricultural uses.[7]

4.2.3 Budgetary aspects

With regard to the tremendous increase in Community budget costs, the financial impact of reform proposals attracts a lot of attention. Interest concentrates mainly on (a) whether direct income transfer payments (sometimes virtually independent of the design of the specific scheme) will significantly reduce the financial burden and, (b) whether direct income transfer payments will improve overall national welfare and gross national product.

Principally, the switch from the present system of price support to one of direct income transfer payments largely corresponds to a substitution of private expenditures (via high consumer prices) for public expenditures. The budget expenditures currently used for storage, export subsidies, and the inferior use of (surplus) products will be reduced if overall agricultural production declines. By substituting private for public expenditures, the gross national product will remain unchanged; income distribution, however, might change due to a reduction of consumer prices and the type of financing adopted for direct transfer payments to farmers.

The financing plans proposed by the authors of the schemes depicted in Table 2 rely mainly on an increase in <u>direct</u> taxes. An increase in

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[7]Referring to the distributional consequences of the MRP Scheme, Henze and Zeddies (1987) state that "on average about twice as much is paid in incentives than would be necessary to make up for income losses.... The participating farmers are able to double their income."

indirect taxes (CP, DCP, and PIT Schemes) would result in an additional burden on low income groups and possibly provide negative effects on the demand for food (see also Runge and Halbach, 1987). When financing direct income transfer payments by public households, the amount of transfers paid to farm households will be influenced by overall economic factors (cyclical movements) as well.

Apart from the discussion on financing, the total budget effects of the schemes proposed attract a fair amount of attention at present. The transfer payment schemes proposed in the 70s account for rather small reductions of the national budget or the Community budget (EAGGF) expenditures. The data used, however are based on past conditions of agricultural markets, prices, agricultural and non-agricultural general settings, etc., which have in the meantime completely changed. For this reason it is not very sensible to repeat the calculations in detail, particularly, since most of the authors point out that the data are partly unsettled and based largely on assumptions. In this context just one study should be cited. Dicke and Rodemer (1982) proposed a system of direct income transfers which differs from other proposals with respect to the immediate and overall removal of current price support and related measures within the EEC.[8] In case farmers are fully compensated for income losses (total producer's surplus) budget relief (on balance) during the first year will amount to 6.35 billion DM (10 percent reduction of product prices); however, budget costs will increase (on balance) by about 35.2 billion DM if producer prices go lower than about 30 percent (the

[8]Therefore, the scheme is fairly similar to the CP, the DCP, and PIT Schemes and is not included in Table 2; entitlement to transfer payments is also restricted to the present generation of farmers.

calculations refer to 1977-78). Budget reliefs increase significantly after completing the adjustment process (after one decade). Calculations referring to the budget effects of direct income transfer payment schemes, which are relevant at present, refer mostly to retirement- and set-aside schemes. They focus primarily on a comparison between the total amount of transfers paid and the decline of budget costs due to a reduction in total agricultural output (Buehner and Gocht, 1987; EC Commission, 1987; Wolffram and Hoff, 1987). These calculations do not refer to real cost-benefit analyses and, therefore, might lead to incorrect conclusions about the efficiency of these programs.

Table 3 presents a comparison between the estimated budget costs and reliefs of the MRP and the SSR Scheme. The data on the estimated budget

Table 3. Estimated Budget Costs and Reliefs of Set-aside Schemes.

Scheme	Land	Participation			Budget Expenditures (during the first 5 years)		Budget Reliefs (during the first 5 years)	
		Farmers	(in %)	Agr. area[1]	total (billion DM)	DM per hectare[1]	total (billion DM)	DM per hectare
MRP	FRG	61000	(8.5)	88000	1.1	1250	1.9	2160
	EC-10	447000	(8.5)	7490000			9.4	1260
SSR-3a	EC-10	40000		480000	1.213	2530[3]	1.569	4360[2]
SSR-3b	EC-10	66000		-	0.734		n.a.	

[1] Agricultural area diverted to non-agricultural uses; [2] 75% of total area set-aside;
[3] including benefits for afforested areas;
(1 ECU = 2.06 DM)

Source: Bühner/Gocht (1987); EC Commission (1987).

costs and reliefs per hectare of agricultural land diverted to non-agricultural use, reveals the huge range of these estimates. However, the relation between budget costs and reliefs remains constant. The assumed participation rates also vary significantly.[9] Short-term considerations of 1 to 5 years suggest that the total reduction of Community expenditure exceeds the total costs of the schemes. Long-term considerations may lead to another conclusion, however, since technical progress will cause further increases both in the size/extent of agricultural areas diverted to non-agricultural use and in the amount of transfer payments required to mobilize these areas. Boeckenhoff, et al. (1985, p. 181) also provide figures on the expenditures needed to reduce input of arable land by 13.5 percent (about 6.6 million hectares within the EEC) in order to achieve a reduction in total grain production of about 20 million tons. If current price levels for cereals did not change, and mainly marginal areas were put to set aside, and any over-compensation of income losses were excluded, then the short-term (long-term) budget expenditures per 100 kg of grain would amount to about DM 20 (DM 12) plus administrative costs and additional expenditures for the maintenance of these areas. These expenditures have to be balanced with terms of trade effects resulting from a reduction in the quantity of grain which would have been exported (about

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[9]Generally, participation rates (the acceptance of the transfer schemes) will depend on the design of the transfer scheme, the transfer formula, and the criteria set up for eligibility. According to the criteria set up within the MRP Scheme, approximately 8-10 percent of the total agricultural area will be set aside in the Federal Republic of Germany on the assumption farmers behave "economically rational." For details, see Bremer, et al. (1987). Participation rates tend to be higher if there are no stipulations on land use (see Wilstacke, 1985, 1987).

4 billion DM).[10] Set-aside schemes, therefore, account for relatively small budget reliefs per hectare of agricultural area diverted to non-agricultural use mainly because they do not provide any incentives to reduce milk and beef production. These products cause significantly higher budget expenditures, as in the case of the MRP and SSR-3 Scheme, which is the main reason why budget reliefs, when calcultated on a per hectare basis, largely exceed budget costs.

Hagedorn and Klare (1986) who proposed the NRS Scheme assume that between the years 1986 and 2015, approximately 100,000 farmers will apply for the pre-retirement benefit. The estimated costs vary according to the number of applicants per year (age structure) and will account for 100 to 500 million DM per year.

The data provided in this section reflects the difficulties in making any serious predictions concerning the financial impact of the schemes proposed. Effects on total budget costs remain unpredictable, especially, if the level of price support is not lowered significantly and income transfer payments are not restricted to low income groups.

4.2.4 Environmental protection

There is no doubt that high and stable producer prices within the EEC have initiated and encouraged a significant intensification and specialization of agricultural production systems. With highly intensified agricultural production, environmental damage (e.g., the contamination of groundwater resources) and changes in the structure of

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[10] In comparison to short- and long-term expenditures, export subsidies amount to approximately DM 15 per 100 kg.

land use occur to an increasing extent. On the other hand, ecological risks and damage are sometimes of minor importance in areas with low land productivity. The maintenance of agricultural production within these areas depends very much on the level of price support. Reform proposals which rely on lowered price support, therefore, will strongly affect the continuation of farming in these areas. Roughly the same effect applies in the case of set-aside schemes providing incentives in the form of a uniform premium, fixed at a low or medium level. As a consequence, land diverted to non-agricultural use will concentrate on areas with low land productivity; this might contradict regional and ecological policy aims. The ecological incidence of set-aside programs could be increased if transfer rates varied according to land productivity or by leaving the determination of region specific premiums to public tenders.[11]

Set-aside schemes, as already mentioned in section 4.2.1, might affect the intensity of the use of the remaining agricultural areas (e.g., land drainage, land consolidation or removal of hedges). Further, they might encourage the expansion of livestock production on the remaining areas which will aggravate the problem of disposal of liquid manure and groundwater contamination. From this discussion it is quite obvious that set-aside schemes, although motivated with environmental policy objectives, are not qualified to pursue these aims very efficiently.

All the other schemes depicted in Table 2 do not provide any determined or goal-directed effects on environmental protection; they have

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[11]Compared to a uniform premium, such tenders (bidding procedures) would, at least theoretically, avoid ineffective producer rents for farmers whose income losses from putting land to set-aside are smaller than the benefits received (de Haen and Thoroe, 1987).

to be supplemented by specific measures of environmental protection in certain regions in order to remove or avoid environmental damage, maintain a devised structure of land use or a specific form of the landscape. Just as obvious is the fact that general compensatory payments to farms in less favored areas, without any stipulations on land use or the type of (animal) production, and even without any precise definition of the farmer's contribution to environmental protection, will contribute little to the above-mentioned objectives (see Peters, 1980; Langendorf, 1985).

4.2.5 Conformity and administrative problems

Conformity. All reform proposals have to consider problems of compatibility and conformity with respect to the basic objectives and principles of the CAP according to the Treaty of Rome (1957) and to national agricultural acts. Principally, a system of direct income transfers with no or minor restrictions concerning entitlement to benefits might be inconsistent with universal ideas on justice and efficiency in free-market economies, and hard to justify in a global reference to any "fundamental" change in agricultural policy orientation.

Apart from this general problem, the income objectives set up for the farm population by means of specific agricultural acts might come into conflict with the distributional consequences of the schemes proposed. This holds true in the case of the MIG scheme; its application requires a redefinition of income objectives first. Further, direct transfer payments provided solely by individual member states contradict articles 92 and 94 of the Treaty of Rome. Although there are a lot of exceptions (special regulations) pushed through by individual member states in the past, the

EC Commission tries to set up common guidelines and regulations (SSR-2 proposals of the Commission, 1987) for income aids financed by individual member states. These guidelines are primarily intended to avoid infringements of the Commission's competence in organizing the CAP and in the "re-nationalization" of the so-called common agricultural policy.

Administration. Most of the reform proposals do not provide any indication or even solution to the administrative and controlling problems. Benefit payments related to the area of agricultural land utilized require an exact registration of farm land first; this could prove to be a difficult undertaking especially in the southern regions of the EEC, and in areas which could be used both as grass and arable land. Set-aside and fallow schemes which cover only certain parts of an individual holding evoke enormous problems in supervising whether individual farmers will keep contracts and regulations. Set-aside or fallow schemes (according to the SSR-3 and MRP proposals) which enforce the entire cessation of farming will largely alleviate these problems.

Transfer payment schemes which attempt to compensate farms for income losses due to the reduction of product prices (CP, DCP, and PIT Schemes), referring to total output during a base period, require efficient methods for calculating the amount of benefits (see Wissenschaftlicher Beirat beim BMELF, 1982, p. 27). This could be done using the concept of "standardized farm income",[12] although the imputed income capacity frequently will be over- or under-estimated especially in the case of big/small farm holdings. The accuracy of these calculations, if they

[12]The "standardized farm income" is an imputed income which refers to the current factor endowment of the farm holding. Total income capacity is calculated using figures on average farm productivity and variable costs.

refer to an imputed farm profit, could be improved by using individual data on the amount of fixed costs.

Income-tested transfer schemes refer to both farm and nonfarm income sources. However, quite a number of schemes do not include unearned income (e.g., interests, rents) or refer to the income of the farm operator couple rather than to the income of the farm household as a whole.

The problems of calculating the benefits will be aggravated if transfer payments are related to total family farm labor input and compared to an average level of regional or national income per working unit or persons being gainfully employed (according to the SSR proposals by the EC Commission, 1987). In that case, income-tested transfer programs will require efficient procedures to assess entitlement to transfer payments and to calculate the amount of benefits. Basically, farm households claiming benefits should give proof of their eligibility.

In case entitlement to benefits is restricted to farm households with an income below a certain minimum income level (MIG Scheme), the stigmatization problem, possible negative social-psychological consequences for recipients, should be taken into account (see Rainwater, 1982). Apart from this problem, which might account for the most serious one, the problem of (non-)inclusion and valuation of assets (farm land) must be considered as well. The MIG Scheme, as proposed by Schmitt and von Witzke (1980), allows for the deduction of assets below a certain limit, otherwise farmers would be forced to sell farm assets in order to be entitled to transfer payments.

In the Federal Republic of Germany the share of farm households with an income below a threshold, according to social welfare aid, amounts to

approximately 8 percent (1978-79). This share declines drastically if computations account for annual fluctuations of farm income and any (at least partial) realization of farm assets (for details see Plankl, 1986). On the other hand, the higher the exemptions on assets the smaller the impacts on factor (farm land) mobility. Therefore, the MIG Scheme, as proposed by Hagedorn and Klare (1986), should be combined with a retirement scheme, and tax privileges for farm land should be removed. However, implementing the MIG Scheme requires a co-ordination of taxation and social welfare policies as well.

Applying a system of direct income transfer payments throughout the EEC causes additional problems. The heterogeneity of national economies with respect to varying productive capacities, differences in the structure of the farm and nonfarm sectors, rates of inflation, levels of agricultural prices, and varying evaluations of farm policy objectives do not give rise to any optimistic prediction concerning the "quality" of decisions obtained within the institutional framework of the EEC (Schmitt, 1978; Henrichsmeyer, et al., 1981, p. 21). Furthermore, international income transfers caused by the Community's financial responsibility have to be taken into account as well. Financing direct income transfers by the Community Budget (EAGGF) might end up with consumers and taxpayers in low income countries being enlisted to co-finance the income transfers to farmers in high-income member states (Thoroe, 1980).

The discussion already reveals that there is in fact no real chance to introduce a "system" of direct income transfers at the EC level. Therefore, the scope of application, the design of the transfer scheme, especially the amount of transfers paid, should be left to national

responsibility; the Community's financial contribution should be restricted to a basic payment taking differences in economic welfare into account.

5. Summary and Policy Implications

This paper presents some reflections on direct income transfers as a means for improving the income position of low income farm households and on dissolving the connection between the level of price support and the production incentive, which leads to a large number of serious problems within the agricultural sectors of almost all developed countries. Direct income transfer payments already account for an increasing amount of total income support being made available to farm households. These transfer payments result from various (however, incoherent) schemes and programs and encompass a wide range of different aims. The programs currently implemented are mainly intended to supplement present price support policy and to correct for unintentional consequences of the CAP.

Apart from the programs currently applied, there are quite a number of reform proposals based on the idea of substituting the system of price support for a system of direct income transfers. The paper discusses the implications of these programs with respect to the allocation of resources in agricultural production, the level and distribution of income, budgetary aspects, environmental impacts, and administrative problems. As the discussion reveals most transfer schemes are not qualified to tackle the most relevant and urgent problems of the CAP in a very efficient or convincing way without creating new distortions. This is mainly due to the fact that they do not completely account for the long-term consequences of the structural adjustment process in agriculture. They may even contribute

to the prolongation of current problems. Moreover, reflecting on the institutional setting of the CAP and the wide range of objectives pursued by different member states, there is a priori very little chance of a successful implementation of these policy concepts.

The present situation in the EEC favors short-term solutions (e.g., set-aside schemes) to alleviate the most urgent problems; long-term considerations, however, should reflect the basic principles of a socially founded free-market economy and should provide subsidiary income support to farm households to ensure a minimum standard of living according to criteria which apply to other social groups as well.

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