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Different Perspectives on Cross-Compliance

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ABSTRACT

Cross-compliance has proven its effectiveness, as can be shown by looking at the Swiss experience with cross-compliance since 1999. Besides describing the existing cross-compliance practices in Switzerland, the paper shows different perspectives on the efficiency and fairness of cross-compliance. It concludes that transaction cost advantages justify cross-compliance only in few cases. Usually, it will be more efficient to decouple social and environmental policy. The strong support for cross-compliance by the Swiss population is explained by a perceived unfairness in the distribution of property rights between farmers and society. If property rights would be redistributed, there probably would be no more need for cross-compliance.

KEYWORDS

Agricultural policy, Tinbergen rule, transaction costs

1. INTRODUCTION

The practice of granting public payments to farmers only if they comply with certain environmental standards is called cross-compliance. Cross-compliance is therefore the label of a policy which couples transfers from the public to the farmer with the farmer's delivery of certain public goods. The difference between cross-compliance and agri-environmental policy, however, is that the transfers paid are no direct reimbursement for environmental protection, but a transfer primarily paid for redistribution reasons. Several authors applaud cross-compliance, as they argue that with a constant amount of transfers to farmers the state of the environment can be improved (Webster, 1997; Mitchell, 1999; Doornbos and Pastor, 2001; Kim, 2001; di Magliano et al., 2001). While this statement is correct, it concerns only the effectiveness of cross-compliance.

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This paper tries to expand the understanding of cross-compliance by exploring its dimensions of efficiency and justice. As real life is usually a good guide to ground normative judgement, section 2 is devoted to a presentation of cross-compliance in practice. In the European Union, cross-compliance has in practice been restricted to either very few areas of production (e.g. Austria) or to very low standards (eg. France; Petersen and Shaw, 2000; Bergschmidt et al., 2003). Besides some programmes in the United States as described by Latacz-Lohmann and Buckwell (1998), Switzerland is one of the few cases where cross-compliance has led to major changes in farming. Since 1999, it has realised the principle throughout its whole agricultural policy structure. The main conditions and experiences of cross-compliance in Switzerland will be described.

There is more than one possible perspective from which to evaluate the efficiency and justice of cross-compliance. We suggest that we start by taking three different perspectives. The methodological viewpoint of these perspectives can be attributed to Jan Tinbergen, Arild Vatn and David Ellwood. None of them has been concerned with the evaluation of cross-compliance in agricultural policy. But in order to honour the originality of their general approach and as a reference for the reader, we define our adaptation of their work to cross-compliance as a Tinbergen-approach, a Vatn-approach and an Ellwood-approach which we will explore in section 3.

It is the comparison of the three different approaches which leads to conclusions and eventually policy recommendations outlined in section 4.

2. CROSS-COMPLIANCE IN SWITZERLAND

The first noteworthy phenomenon relating to cross-compliance in Swiss agricultural policy is that it would not have happened without pressure from the people. While Switzerland has a direct democracy, most laws are drafted by the federal administration. In the case of agricultural policy, the government, accompanied by the most significant interest groups, in the mid-nineties largely suggested following the Common Agricultural Policy of the European Union. A change from a market support system towards a direct payment system without particular emphasis on environmental issues was brought to the ballot box – and, to the surprise of the administration, failed.

At that point, environmental NGOs entered the field and developed a reform programme of which cross-compliance was a central point. Farmers should be eligible for direct payments only if they complied with a bundle of environmental restrictions. The government picked up most of the NGO's suggestions and, after one year, again put a reform proposal to the ballot box – this time with much more emphasis on environmental aspects, accepting the principle

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of cross-compliance from the NGO's. This time, the proposal won a majority of 76 per cent of the votes.

Since then, two kinds of direct payments exist. General Payments, which cover 80 per cent of the direct payment budget, are subject to cross-compliance and bound to hectares of land and to the number of ruminants. The rest are outright agro-ecological payments for extensified or idle land or for landscape elements such as hedges and high-stem trees.

The qualifying conditions for direct payments can be grouped into cross-compliance and external criteria. To start with the latter, direct payments are limited to farmers below 65 years old. While this is meant to enhance farm succession and structural change, it sometimes leads to artificial farm successions, for instance to the farmer's younger wife as soon as the farmer himself reaches his 65th year. In addition, there is a minimum size for farms eligible for direct payments, and there are income thresholds above which no direct payments are granted. Per calculated labour unit, direct payments may not exceed a maximum of 65,000 Fr.

The limits set by cross-compliance are summarised by the *Ökologischer Leistungsnachweis* (ecological activity confirmation) in the legal framework which consists of several elements:

- A nutrient balance has to prove that no surplus nitrogen and phosphorous are applied to the soil.
- At least seven per cent of agricultural land has to be extensified under specified criteria. Only for some kinds of extensification, additional ecological direct payments are granted.
- A crop rotation with at least four different elements has to be applied on the arable land.
- The soil has to be covered at certain reference dates, varying from region to region.
- Only certain pesticides may be applied to the crops.

Anybody familiar with farming can see that the restrictions are quite severe for crop farming. For animal husbandry, legal norms with respect to animal welfare are considerably stricter than in most other industrialised countries anyway. Hence there was not much leeway for cross-compliance in animal production.

In spite of the several restrictions, around 90 per cent of Swiss farms qualify for direct payments, gainsaying early claims that many farms would not be able to fulfil the conditions set. Admittedly, the incentives are strong. Between 2000 and 2002 an average farm would earn an agricultural income of 56,000 Fr., of which 43,000 Fr. were direct payments. For an average farm in the mountain region, direct payments at 53,000 Fr. would even exceed the agricultural income

of 42,000 Fr., meaning that some of the direct payments have to be used to cover the costs of the farm.

The political stability of cross-compliance is rather strong. In the public discourse about Swiss agricultural policy, the practice of cross-compliance contributes largely to maintain the current system and to weaken the pressure for changes and budget cuts. Likewise, the ecological effectiveness of cross-compliance is also high. Herzog (2004) shows that, since 1990, excess phosphorous decreased by two thirds. The nitrate concentration reductions in the groundwater are also considerable and reductions are expected to continue in the future.

Hence, the practicability of cross-compliance as reported by Latacz-Lohmann and Buckwell (1998) for the United States can be confirmed for Switzerland, too. The following section, however, will discuss whether there would be fairer and more efficient ways of protecting the environment from agricultural damage.

3. NORMATIVE PERSPECTIVES

3.1. A Tinbergen perspective

The Dutch economist Jan Tinbergen discovered a systematic causal connection between the number of political instruments and their efficiency when he analysed cyclical fluctuations of the US economy in 1937. In his book *On the Theory of Economic Policy* (1956) Tinbergen eventually describes the general interrelation between political goals and political instruments. To summarise briefly, for a set of given political aims we can formulate

$$y = Az + Bu$$

with

y = Vector with maximum utility values of target variable y_i ,

z = Vector of instrumental variables z_k ,

u = Vector of all economic data u_l influencing target variables (exogenous variables)

A = Matrix of partial coefficients a_{ik} ($a_{ik} = \delta y_i / \delta z_k$),

B = Matrix of partial data effects b_{il} ($b_{il} = \delta y_i / \delta u_l$).

Hence, all target variables are causally linked to all instrumental variables. If the values of the target variables (vector y) and the exogenous variables (vector u) are defined and fixed, the equation system will usually only have one solution

$$z = A^{-1}y - (A^{-1}B)u,$$

if A , the matrix of partial coefficients, is quadratic. That implies that the number of instruments equals the number of externally given target variables.

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In economic policy literature, this causal relation came to be known as the Tinbergen-rule. It says that a policy will usually be more efficient if for each target to be achieved, at least one instrument is available. Vice versa: Coupling several targets with one instrument will lead to inefficiencies. Such a coupling will lead to a situation where several targets can only be achieved with a particular relation to each other, so that an important degree of freedom is lost. Even if we deal with an instrument which is able to achieve more than one target efficiently, the problem arises at least as soon as changes in the environment require an adaptation of instruments.

Cross-compliance is, of course, a classic example of coupling several targets with one instrument. The traditional justification for transfers like direct payments is social or 'income' policy. The Economic Research Service of the US Department of Agriculture formulates it thus (2002): 'Enhancing and stabilising farm income is a fundamental feature of U.S. agricultural policy.' One can cynically explain that goal by strong rent-seeking activities by farmers and vote-maximising strategies on the part of politicians (Hagedorn, 1989; Tullock and Hillman, 1991). If, however, this 'income policy' has any normative justification, we can only interpret it as a euphemism for social policy. The justification would be that farmers, in general, earn little enough to make them eligible for public transfers. For Switzerland, panels show that farming is the sector with the highest percentage of people belonging to the 'working poor' (Streuli and Bauer, 2002).

Cross-compliance causes a new target to enter these transfers. Now we redefine the transfers as being not only targeted towards social justice, but also towards environmental stewardship. An instrument was created that clearly serves several goals at once.

The violation of the Tinbergen-rule by cross-compliance regulations was, more or less explicitly, noted by Latacz-Lohmann and Buckwell (1998), Merriks (2002) and Harte and O'Connell (2003). The efficiency losses are first and foremost caused by the frequent impossibility of granting the 'right' reimbursements for public goods (reflecting environmental utility) and thus setting the right incentives if social transfers are to be paid with the same instrument. As indicated in Table 1, cross-compliance may lead to negative welfare effects:

It can be seen that there is some likelihood that cross-compliance decreases overall welfare. As the incentive is meant as a general transfer, not as an environmental premium, it is likely (and the case in Switzerland) that the incentive will be far higher than the costs. Possibility 1 and 2 are thus much more likely than 3 or 4. In case of possibility 1, the welfare loss could easily be avoided if one were to split environmental policy (offering a premium equal to ecological utility, which would not be adopted by the rational farmer as it would not cover his costs) and social policy (granting a subsidy independently from the provision of environmental goods). The welfare gain under Possibility 2, however, could as well be achieved without cross-compliance, offering environmental

TABLE 1.: Welfare effects of cross-compliance (Latacz-Lohmann and Buckwell, 1998, modified).

	Farmer behaviour	Welfare effect
1. Incentive > Costs > Ecological utility	Participation	Welfare loss (costs exceed utility)
2. Ecological utility > Incentive > Costs; Incentive > Ecological utility > Costs	Participation	Welfare gain
3. Ecological utility > Costs > Incentive	Non-participation	Potential welfare gain not realised
4. Costs > Ecological utility > Incentive; Costs > Incentive > Ecological utility	Non-participation	neutral

programmes and a social transfer independently. That means that cross-compliance, compared to separated social and environmental policy instruments, can easily lead to welfare losses, but not to welfare gains. Inefficiencies arise mainly from too much conservation being paid for by the state. This notion shows the relevance of the Tinbergen rule to cross-compliance.

3.2. A Vatn perspective

It occurred to the Norwegian agricultural economist Arild Vatn that policy solutions favoured by economic theory apparently were not always the most reasonable in practice. Looking for a solution to this contradiction, he found that classical economic theory tended to neglect transaction costs.

For some time institutional economists have been arguing that the level of transaction costs may influence the relative efficiency of different policy choices (North, 1990; Twight, 1994). Vatn, however, was the first who made the point that transaction costs would influence the efficiency of policy options in a systematic way (Romstad et al., 2000; Vatn, 2002). There are three related points which systematically influence the level of transaction costs entailed by a policy option.

1. The more precise a policy is in covering each aim with a fitting instrument, the higher marginal transaction costs will tend to be. 'All costs considered, it would not be reasonable to expect a precise policy to be optimal.' (Vatn, 2002: 315)
2. A finding taken from Williamson (1985) is that the frequency of a transaction influences its costs. 'The more repetitive the transactions are, the less

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important these cost become per unit.' (Vatn, 2002: 320)

3. Vatn's own empirical work revealed that policies connected with market goods (such as a tax on fertilisers) tended to have much lower transaction costs than policies connected with non-market goods (such as support for special landscape ventures).

Hence, a transaction cost perspective may well influence the judgement on the efficiency of cross-compliance. Cross-compliance describes the option of bundling several non-market goods, as in the Swiss example fertiliser reduction, soil coverage and others, and of linking them to direct payments which are linked, if not to the production of market goods, then at least to factor endowments (acreage, animals, etc). Transaction costs may well be saved by combining the delivery of public goods from the farmer in one single contract.

It can thus be taken for granted that cross-compliance may entail welfare losses from the coupling of different targets, but will have transaction cost advantages from summarising different programmes into one. But how do both effects balance? To what degree will saved transaction costs outweigh frictional losses from target coupling? Only empirical evidence can judge the significance of both effects.

Besides cross-compliance, the Swiss government also offers extra direct payments within agri-environmental programmes. For these programmes, transaction cost estimations were made on the federal, the regional and the community level as well as on the farmers' side by the methodology as outlined by Mann (2000). Results from three different cantons were averaged. The percentages of transaction costs in relation to technical costs of the programmes and to payments to farmers are shown in Table 2.

TABLE 2. Technical costs, transfers and transaction costs of agri-environmental programmes (Fr./ha) for Swiss valley region.

Measure	Techn. Costs	Transfers	Transaction costs (sum)	Share of technical costs	Share of transfers
	(1)	(2)	(3)	(3)/(1)	(3)/(2)
Extensive Grassland (Fr./ha)	1243	1500	75	0.06	0.05
Low-intensity grassland (Fr./ha)	615	650	72	0.12	0.11
Litter-meadow (Fr./ha)	323	1500	102	0.32	0.07
Hedges (Fr./ha)	4486	1500	212	0.05	0.14
Mixed fallow land (Fr./ha)	2599	3000	103	0.04	0.03
Rotational fallow land (Fr./ha)	3422	2500	107	0.03	0.04
Arable field margin (Fr./ha)	1312	1500	1689	1.29	1.13
High-stem trees (Fr./ tree)	77	15	2	0.02	0.13

The results show some variation between programmes. But for quite a number of them, transaction costs do not really come into account. As long as transaction costs total around five per cent of all costs or less, the potential for saving transaction costs by changing policies will be very limited. It is very likely that welfare losses from target coupling in the Tinbergen sense will, in such cases, more than outweigh reduced transaction costs. The same will apply in cases where the share of transaction costs to total costs is only so high because we deal with low-cost, but highly useful programmes, such as in the case of litter-meadows.

On the other hand, an exception shows that transaction costs may become prohibitively high. The programme to conserve arable field margins has transaction costs that exceed technical costs. The cause of this phenomenon is the reluctance of farmers to accept this programme. In the whole of Switzerland only 40 to 50 hectares of arable field margins are created each year. But, because a considerable share of transaction costs are fixed (for example, developing and supervising the programme in the federal administration), this not only confirms Williamson's (1985) mentioned finding that low frequency transactions entail high transaction costs, it also shows that in such cases there is room to save a large share of programme costs. One option would, of course, be to abolish the programme. However, if it were decided that the programme is of major importance, there might be a move, for example, to bundle arable field margins together with other agri-environmental or general transfer programmes, breaking the Tinbergen rule but still increasing overall efficiency. In such cases, the justification of cross-compliance might be possible.

3.3. An Ellwood perspective

We may do an injustice to the social scientist and former Assistant Secretary for Health and Welfare in the U.S. administration by reducing him to his normative work. Ellwood has done ground-breaking descriptive work on the sequencing of welfare dependency (Ellwood and Bane, 1983) and on the connection between social status and welfare dependency (Ellwood, 1989). But his normative analyses on the working poor give us insights not into the efficiency, but into the perceived justice of cross-compliance. It provides the key to understanding why there is such broad support for cross-compliance, both in the (non economic) scientific community and in the population: As mentioned, the policy package with cross-compliance as a core element was waved through in Switzerland with a 76 per cent majority of voters.

In his book *Poor Support*, Ellwood (1988) was one of the first to concern himself with the problem of the working poor. From his perspective, any attempt to solve the problem of welfare had to start with this group. These were the people who were 'playing by the rules' but 'losing the game' (Ellwood, 1988; 125). They had accepted responsibility for their families and they had

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found work. They could not, however, earn enough to keep their families out of poverty. Nor did they get much help from the current welfare system. For Ellwood, that was reason enough to justify tax transfers to the working poor over general welfare to the unemployed.

Ellwood's arguments may serve as a justification to transfer funds to farmers with a low income for social reasons. But where are the parallels to cross-compliance, or, rather, to how cross-compliance is widely perceived? There seems to be some consensus in society to ascribe to environmental stewardship the morally outstanding role which Ellwood assigns to work in general. Ellwood justifies transfers not only on the basis that people are needy, but on two conditions: people are poor, but people work. Likewise, public opinion is willing to transfer money to farmers if they similarly fulfil two conditions: As a sector, they are also poor, and they contribute to society by preserving nature. This line of argument was often heard before the referendum on agricultural policy.

The perception is that nature conservation is something you do for society which entitles you to public funding. This widespread notion has a right and a wrong side. The right side is that nature conservation is, of course, a public good and it has to be society rather than consumers who purchase the product from you. The wrong side of the argument has recently been elaborated by Johnson (2003): Environmental protection is not morally superior to the production of market goods, but just has to be organised in a different way. A farmer who produces wheat may do as much for society as a farmer who produces biodiversity on his fields. His remuneration has to be organised in a different way, but he is not morally inferior and it is certainly no reason to exclude him from social welfare.

Following Ellwood's arguments, it may be plausible to exclude from transfers farmers who breach legal restrictions in the environmental or other fields. It is also plausible to pay farmers complying with agri-environmental programmes transfers which cover costs or, better, reflect the utility of the programmes for natural resources. But if one decides to pay transfers to farmers for social reasons, there is really no point in including only farmers who decided to produce extra environmental goods rather than focusing on the production of market goods.

4. DISCUSSION

All three perspectives outlined in the last section have contributed to an understanding of aspects of the efficiency or fairness of cross-compliance. In general, it can be shown that it makes sense from an efficiency viewpoint to split agri-environmental from social policy and to pay social transfers according to social needs and agri-environmental transfers according to the public goods which have been delivered by the farmer (Tinbergen perspective). However, there may occasionally be cases where transaction costs can be saved by coupling

environmental programmes to general transfers if the environmental schemes seem important but farmers are reluctant to adopt them. (Vatn perspective).

New questions arise regarding the fairness of cross-compliance. It has been argued that the public wants to see environmental benefits in return for granting social transfers (Ellwood perspective). As this link seems unreasonable from a social science perspective, it should be questioned why the attitude persists. One possible answer is, of course, to simply point to a lack of information and an imperfect understanding of the market for environmental goods. A more likely option is, however, that the current distribution of property rights between farmers and the rest of the society is implicitly considered as unfair by the majority of citizens. By paying transfers, society presses farmers to act in a way more in accordance with what is considered a fair distribution of property rights.

To give an example: One of the obligations a Swiss farmer has to meet in order to qualify for general payments is an even nutrient balance: He may only add so much nitrogen to his soil as can reasonably be assumed to be utilised by the crop. This prevents nitrates spilling into the groundwater, causing health damage. Since we have learned a lot about the harmful effects of nitrate in drinking water in recent decades, there are, indeed, good arguments for adopting a policy that reduces any nitrogen surpluses, possibly to zero. The basic alternatives of achieving that target are either to pay the farmer for such a reduction, or to oblige him to do so without reimbursement.

Scheele and Schmitt (1987) have developed good arguments why farmers should not have the right to spoil the groundwater below their land. It is much more plausible to assume that groundwater is a priori a common resource which no one has the right to damage for free than to assume that the quality of groundwater is subject to the farmer owning the land above the groundwater. Nitrate emissions from fertilisation are a classical technological externality which yet has to be internalised.

The fact that farmers in almost the entire world do have the right to leak their nitrogen emissions into the groundwater has reasons originating in path dependency as well as in visibility. Because the merits of artificial fertilisers were known well before the dangers of nitrate emissions, hardly anybody doubted that farmers were allowed to deploy as much fertiliser on the soil as they wanted. This explains the historical distribution of property rights. And, unlike most external effects such as airborne emissions or noise, nitrate emissions are invisible. That makes it difficult to argue for restricting farmers' freedom to put fertiliser on their soil. Nevertheless, that would be the most reasonable thing to do.

The example of nutrient balance makes it clear that it would be worthwhile redistributing some property rights between farmers and society. Such a redistribution having occurred, there are good arguments for the political instrument of cross-compliance hardly being needed any more. It does not usually make sense to couple social and environmental policy instruments anyway, nor would there

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be a public demand because there would be no need to rectify the environmental outcomes of agricultural production.

Social scientists since Coase (1960) have made it obvious that a clear distribution of property rights is a prerequisite for an efficient allocation of resources. They have said too little, however, about the justice aspect of property right distribution, particularly between individuals and the public. This aspect deserves the increased attention of social scientists which might, indirectly, also contribute to the efficiency of policy, as the case of cross-compliance shows.

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