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Abstract

This paper discusses regulation of rural land-use and compensation, both of which appear to have become more common but also more disputed. The implications of contemporary theories in relation to this matter are examined. Coverage includes the applicability of new welfare economics, the relevance of the neoclassical theory of politics, and the implications of contemporary theories of social conflict resolution and communication. Examining case studies of Swiss and Australian regulation of the use of rural properties and the ensuing conflicts, it is found that many decisions reflect a mixture of these elements. Rarely, if ever, are social decisions in this area made solely on the basis of welfare economics, for instance social cost-benefit analysis. Only some aspects of such decisions can be explained by the neoclassical theory of politics, and only *ex post*. Theories of social conflict resolution suggest why approaches of discourse and participation may resolve conflicts on regulation and compensation and in which way. These theories and their practical application seem to gain in importance as contest against decisions in a sovereign capacity increases. The high complexity of most conflicts on regulation and compensation cannot be tackled with narrow economic theories. Moreover, the Swiss and Australian examples show that such approaches of conflict resolution may rather favour environmental standards.

Keywords: Australia, compensation for takings, conservation, environmental regulation, property rights, rural land-use, Switzerland, welfare economics.

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1. INTRODUCTION

The level of environmental regulation of rural land-use is increasing. This is partly a consequence of increasing loss of natural environments due to economic growth which tends to increase the scarcity value of remaining natural habitats. There is also greater public appreciation of the importance of environmental issues, and increasing weight on ecocentric values by society. This increased regulation has generated growing social conflict because many rural landowners and farmers believe that they are being stripped of their natural property rights and customary rights, often with little or no compensation, and feel their livelihood threatened.

The focus of this paper is changes in welfare due to regulation of rural land-use and the theories to explain and guide regulation and compensation. Three theoretical bodies of knowledge are investigated. The first is the relevance of new welfare economics. Because politics is largely ignored by new welfare economics, secondly the neoclassical theory of politics as a guide to social decision-making is also examined. Thirdly, the relevance of theories of social conflict resolution is investigated, especially their applicability in resolving conflicts about regulation and compensation. The relevance of these theories is then explored by means of two case studies. The first concerns agricultural measures adopted in Switzerland to protect biodiversity and ecosystems, and the second relates to regulations concerning the clearing of native vegetation in Australia. It is found that none of the extant theories explain completely the policies adopted.

2. NEW WELFARE ECONOMICS – SHORTCOMINGS IN RELATION TO ENVIRONMENTAL POLICY AND COMPENSATION

New welfare economics differs from the classical welfare economics and classical utilitarianism in avoiding interpersonal comparisons of utility. As a result, to answer the old economic question of which economic or political activities improve welfare, new welfare economics concentrates on economic efficiency in a Paretian sense. The avoidance of interpersonal utility comparison has been hailed by many as resulting in a relatively value-free form of social welfare economics.

The Pareto criterion implies that an activity or change only improves social welfare if at least one person is better off in the new situation and no person is worse off than previously (Rothschild, 1993). This criterion has limited applicability because few policies, especially environmental policies, involve changes in which no one is worse off. To overcome this shortcoming, Kaldor and Hicks proposed a criterion for an improvement in social welfare that is less conservative (Little, 1957, Ch. 6) and that has become the basis of most social cost-benefit analysis. According to the principle, an increase in economic welfare occurs if those gaining from a policy change could potentially compensate the losers and still be better off than before the change (though compensation may not actually take place). With regard to land-use regulations, this criterion would support restrictions on land-use (e.g. on clearing of trees, or use of agrochemicals) to prevent habitat change on farms in order to conserve species and ecosystems, if the gains to society exceed the economic loss of the farmers who have their property rights curtailed. Compensation need not be paid; the only relevant consideration is whether an improvement in welfare will occur. The question of justice is

swept aside from two viewpoints: property rights are limited, and there may be situations where a Kaldor-Hicks improvement does occur, but the change in income distribution favours those already best off.[1]

Scitovsky (1941; 1942) was one of the first to point out that this criterion is likely to be deficient for social choice. He stated that any change influences the welfare distribution and criticised the Kaldor-Hicks criterion for attributing undue importance to the particular distribution of welfare obtaining before the contemplated change. He suggested that if the change improves welfare, it would be socially acceptable provided the initial welfare distribution is reestablised (e.g. by taxation) and this situation still presents an improvement.[2] However, if income inequality increases, a further judgement would be needed on whether the economic efficiency gains are sufficient to offset the worsening of social justice. Only if they are, could the policy change be socially acceptable. Note that in both cases value judgements are required but they are needed to a greater extent in the latter case.

In relation to restriction on rural land-use, Scitovsky's rule would suggest that compensation need not be paid to farmers and rural landholders if a welfare improvement occurs and the income distribution is not worsened. However, if the distribution of income deteriorates, further social value judgements are required. When this aspect is taken into account, there will be cases where environmental restriction of rural land-use is only justified if

[1] Backhouse (1985) shows that Kaldor specifically avoided the issue of distribution. Kaldor argues that it is impossible to decide on economic grounds which income distribution maximises social welfare.

[2] Scitovsky (1941) came to his proposition by revealing a paradox of the Kaldor-Hicks principle. He showed that an improvement from A to B (with potential compensation) can fulfil the Kaldor-Hicks criterion as well a reversal from B to A. This was later explained by Samuelson (1950) with the development of the utility possibility frontier. This paradox arises as a result of ignoring income distribution when judging about welfare change.

compensation is paid to landowners. However, at present welfare economics provides no definite rule in such cases.

Hicks was aware that the Kaldor-Hicks principle can create difficulties in application when substantial changes in income distribution are likely to occur (Little, 1957). He suggested, however, that when many policy decisions are being made over a sufficient length of time, the losses of parties from one set of policy decisions may be more than counterbalanced by their gains from other social policy decisions. Consequently, Hicks believed that when the totality of all decisions relying on the Kaldor-Hicks principle are considered, all gain, or at least there is a high probability of this. This is a rather optimistic point of view, but is a possibility. It is unclear that this desirable outcome will be achieved in practice when the fortunes of some individuals are tied to specific assets, e.g. rural land in a particular location, or a river valley which is being considered as a dam site.

A further problem arises because failure to pay compensation for the taking of property rights or uncertainty about whether payments will be received by landowners, such as is evident in restrictions on land-use, can encourage economic inefficiency. For example, the fear of future government restrictions on land clearing without adequate compensation may result in socially excessive clearing by landowners (Stroup, 1997) and provide incentives to landowners to invest in lowering the conservation values of their land (Polasky et al, 1997). This implies that application of the Kaldor-Hicks principle can promote economic inefficiency in a dynamic setting.

A problem with the Kaldor-Hicks principle is that it displays no inherent respect for individual property rights or insufficiently considers circumstances in which such rights should be respected. Even the Scitovsky test does not provide a sound guide to the

dispensation of justice. This test suggests that an environmental restriction on land-use which ensures welfare improvement and 'improves' the distribution of income, but for which landholders are not compensated, is socially desirable. Apart from the problems in deciding whether income distribution is improved by the change, it may be unjust to ignore actual or presumed property rights. In most societies, this would be considered unjust in itself. Justice does not depend on improvements in income distribution and economic efficiency alone, and in some circumstances these variables can be immaterial for the dispensation of justice. This is definitely so for those who consider respect for private property to be a 'natural right' (cf. Dragun, 1999).

Coase's theorem is also relevant to this issue. Coase (1960) argued that in the absence of transaction costs, society would adjust most efficiently to the presence of environmental externalities if rights to generate or not be subject to these externalities were clearly and definitely assigned. In the case of a polluter (an agent degrading the environment), maximum economic efficiency could be achieved by giving the polluter the right to pollute or the 'victims' the right of a pollution-free environment. In the former case, the polluter would have to be compensated by victims to refrain from pollution and in the latter case the polluter would have to pay 'victims' so as to be allowed to degrade their environment. Coase argued, however, that the party to whom property rights are assigned is immaterial from an economic efficiency point of view – the important thing is that property rights be definite and that appropriate exchange be made to alter behaviour with regard to environment. The question of justice does not enter the approach of Coase – its sole criterion is the attainment of economic

efficiency in Pareto's sense.[3] In the case of rural land-use, Coase's approach requires either that each landowner be given absolute rights to carry out any environmental changes on their land, in which case victims would need to pay landowners if they wished to avoid land-uses considered by them to be undesirable. Or society is given the right of not having to accept any environmental degradation, in which case landowners would have either to refrain from actions or compensate society.

Coase's disregard of social justice is unfortunate because justice has little to do with the attainment of economic efficiency. In fact, it is often the case that economic efficiency must be forgone to achieve justice. Respect for individual property rights, especially where property has been obtained fairly and title is clear, can be an important value in itself as argued by Locke (1960). Clear respect for property rights may also have the side-benefit that it promotes economic efficiency in a Paretian sense.

New welfare economics has failed to address adequately the questions of compensation and justice in the use of resources and in particular in the matter of justice in relation to property rights. It therefore provides a weak guide to policy, even if supplemented by Scitovsky's rule for considering income distribution. In addition, it pays no attention to the effectiveness of proposed policies in resolving social conflicts. It seems ill-equipped to deal with social decisions about modern environmental policies which can reduce the property rights. Part of

[3] Coase was not interested in the political or social considerations behind the assignment of property rights but in its consequences with regard to the allocation of resources and payments of compensation. He reads: "The reasoning employed by the courts in determining legal rights will often seem strange to an economist because many of the factors on which the decision turns are, to an economist, irrelevant. ... It is always possible to modify by transactions on the market the initial legal delimitation of rights." (Coase, 1960, p. 15)

the reason is its partial rather than holistic nature. For example, apart from inadequate attention to questions of justice, it ignores the politics of compensation.

3. NEOCLASSICAL THEORY OF POLITICS TO EXPLAIN COMPENSATION

In political decision-making processes involving regulatory takings on land-use and their compensation, the outcome may widely bear upon the rational, utility-maximising behaviour of individuals in governments, public services and special interest groups as well as that of taxpayers. Indeed, at a general level, laws, regulations and compensation are frequently considered to result from interest articulation of individuals or groups. The neoclassical theory of politics (public choice theory) and the theory of interest groups explore this possibility. Both theories are based on the behavioural assumption of rational economic man. Thus, politicians, the administration, the electorate and the public are considered as being composed of individuals who rationally pursue individual aims and maximise their utility (Downs, 1957; Niskanen, 1971; Tullock, 1987). Groups only become organised to express their members' interest if at least some members have sufficient incentives to promote their self-interest, i.e. to maximise their utility (Olson, 1965).

Behavioural assumption of politicians, voters and public servants

The behaviour of politicians, voters and public servants is explained by the neoclassical theory of politics as follows. The politician's search for maximum utility mainly finds its expression in their search of being elected or re-elected. Thus, the behaviour of politicians is not necessarily that which maximises the public welfare but rather that which is thought of as being rewarded by voters (Tullock, 1987). This behaviour also considered to prevail with regard to regulatory takings and compensation.

The pursuit by voters of self-interest (Downs, 1957) is reflected in their voting in favour of the provision of private goods rather than in favour of public goods. With regard to regulatory takings and compensation, this means that the regulated party (e.g. landowners) will vote depending on the effects upon them personally. On the other hand, votes are not influenced by any other consideration than self-interest, particularly since the average voter is not well informed about what they vote for, except for their special interest. Additionally, following the same behavioural assumptions, voters are quite myopic and forget easily political decisions. Hence, politicians will tend to avoid unfavourable decisions immediately prior to elections (Frey, 1978).

The decisions of public servants are supposed to follow the private motives and self-interest of bureaucrats (Downs, 1957; Niskanen, 1971). With regard to regulatory takings and compensation, this means that public servants will favour complex regulations, command-and-control-instruments and compensation, because these increase the size of departments and their power and importance. Also, public servants will favour regulation and compensation solutions that assure re-election of politicians due to symbiotic relationships involving mutual interest (Tisdell, 1982), and will avoid conflicts with interest groups and other departments of public services. In general, these considerations imply a bias of public servants in favour of compensation for regulatory takings.

Though the neoclassical theory of politics is able to explain some behaviour and decision-making in politics, it has major limitations. The principal reproach is the use of the highly simplistic model of economic man with a given utility function and utility maximising behaviour borrowed from neoclassical economics, though there is a large body of evidence that refutes these simplistic assumptions (e.g. Georgescu-Roegen, 1954; Simon, 1955; Kalt

and Zupan, 1984; Kahneman et al, 1986; Etzioni, 1988). Further limitations have been revealed by research in experimental economics (e.g. Fehr and Tyran, 1997; Gintis, 2000) and recent research in public choice (e.g. Schram, 2000). Indeed, the neoclassical theory of politics is unable to explain various empirical facts such as voting behaviour, political long-term decisions, voluntary co-operation, non-paid community work and change of societal preferences. Humans – including those in the political arena – are motivated by a multitude of factors, of which self-interest and economic factors are only a part (Etzioni, 1988). Hence, to explain everything by self-centred utility maximisation strongly limits the power of explanation. Other determinants of human and political behaviour are civility, morals, ideology, symbols, co-operation, convergence of positions in dialogue, long-term orientation and altruism. An additional topic ignored in the neoclassical theory of politics is institutional settings and constraints and the dynamics of processes that strongly influence political decision-making and behaviour (Hodgson, 1988).

Thus, the neoclassical theory of politics draws attention to the fact that there can be elements in political decisions and solutions that involve personal utility maximising behaviour. But a full explanation, to say nothing of prediction, is not possible within this framework. The case studies introduced below illustrate that regulation and compensation are determined by numerous factors some of which are highlighted by the neoclassical theory of politics.

Behavioural assumptions of interest-groups

Interest groups can have a strong impact on decisions on regulatory takings and compensation by influencing politicians' decisions, public servant's positions, public opinion, and the casting of votes through (partial and biased) information and lobbying activities, and by affecting the nature and degree of the conflict generated in politics and in the public arena.

The main message of the theory of interest groups is that only small groups provide incentives for individuals to make sacrifices for the objectives they share with others and are likely to organise or act to achieve their collective objectives (Olson, 1965). Economic incentives for interest group formation arise if the benefits of action outweigh the costs. This is often the case (i) for groups with highly unequal interest amongst members in the promotion of a commonly shared good, or (ii) for groups that represent interests as a by-product of other activities[4]. Thus, interests specific to a small group, linked with market or other activities and unequally distributed within a group, are likely to be well organised and represented.

With respect to regulatory takings and compensation, this implies that the power and weight of the various interest groups involved may differ. Farmers have traditionally been represented in well-organised and influential groups (Olson, 1965). On the other hand, environmentalists and their sympathisers have been less well organised to lobby their interest[5] due the large number of interested people with, however, heterogeneous interests, and the public-good character of environmental protection (Kurz et al, 1996; see also Downs, 1972). For these reasons taxpayers are hardly organised at all.

The main limitation of the theory of groups is its neoclassical behavioural assumption that is unable to explain fully group mechanisms and the impacts of groups. Thus the theory of groups provides limited insight about how groups form, what interests they express and in

[4] This is often the case for farmers. Many farmer organisations in a first place pursue economic objectives or initially did so (Olson 1965). Important economic objectives are a favourable distribution-structure for farm input, a structure to market the produces, structures to co-operate economically (for instance by sharing machinery), and finally to offer favourable services such as insurance and legal advice.

[5] Political influence through lobbying may not be mixed up with broad media coverage of which environmental groups in general get a lot.

what way, how policy-makers deal with politically relevant groups, and what is the impact of social groups on individual behaviour, beliefs, feelings and so on (van Winden, 1999). For instance, experiments have shown that people do not take every chance to free-ride. However, neoclassical theory assumes overall free-riding which is considered as one reason why interest in public goods hardly gets organised (see Marwell and Ames, 1981). Thus, the absence of free-riding in small groups is a weak explanation for their setting-up. Further, empirical research indicates that visible group-interest may reflect the interest of hidden organisations. Hence, the articulated interests may not fully reflect those of the claimants (Salhofer et al, 2000). Consequently, explaining regulation and compensation by the neoclassical theory of groups – together with the theory of politics – does not do justice to the complexity of human decision-making and overall societal and political framework (Pennington, 2000). The examples introduced below reveal some influence of group interest and the individual rationality on policy outcomes. However, a precise analysis and explanation of policy decisions needs a more complex theoretical body and thorough investigation.

4. RESOLUTION OF CONFLICTS ON REGULATORY TAKINGS AND COMPENSATION

Welfare economics and the neoclassical theory of politics consider regulatory takings and compensation as being acts adopted in a sovereign capacity. These, in general, involve a proper genre of conviction in cases of discontent or conflicts – namely power and compensation (Renn, 1996, based on Habermas, 1984). Yet, such non-settlement of conflicts is often contested, giving the conflict socio-political dimensions. Two overall and interdependent reasons for protests against regulatory takings and compensation programmes can be mentioned. First, regulatory takings and compensation with their underlying implicit

valuations are located at the interface of politics and daily life. These spheres, however, are ruled by different forms of interaction and conviction, and involve different communicative rationalities (Renn, 1996 based on Habermas, 1984). In politics, power and compensation are used to convince and to interact, whereas in daily life, it is disclosure of valuations and discourse that are used to convince and to interact. This contrast of communicative rationality and practice can lead to conflict, mistrust and opposition towards the decisions of political or administrative authorities. Second, since the 1970s, Western societies have seen the advent of powerful and well-rooted civic movements and non-governmental organisations (NGO) which have raised the public's hesitance to accept political decisions that directly affect it. The scope for political participation has increased enormously.[6] Consequently, regulatory takings and compensation schemes frequently are contested by a self-confident and empowered citizenry requesting political participation. This also holds for some non-western countries like India, in which an empowerment of a broad strata through grassroots movements and NGOs has taken place for the last two decades.

Given this framing of conflicts on regulatory takings and compensation, consideration is needed of the literature, discussion and practice of conflict resolution and political participation which has blossomed during the last two decades (e.g. DeSario, 1987; Renn et al, 1995). Moreover, a backing for this turn comes from economics which is about to re-discover the potential of communication – or as Kesting (1998, p. 1045) suggests, its "inherent special productivity" with regard to the co-ordination of economic activities. This special productivity is based on the fact that language and communication allow the exchange of positions and opinions before acting and therewith allow the development of new solutions

[6] Strengthened participation also extends to local governance. With regard to European countries see the theme issue of Environment and Planning C: Government and Policy 2000, Issue 1.

to problems. In many instances, these solutions have higher quality and lower cost than those arising from non-communication.

Where does this potential or special productivity of communication comes from? Kesting (1998) reviews recent and older investigations studying communication and discourse, in experimental game theory (e.g. Dawes et al, 1990; Frey and Bohnet, 1995), theory of language and economics (e.g. McCloskey, 1994) and institutional economics and socio-economics (e.g. Boulding, 1962; Hirschman, 1970). This research stresses that communication and discourse enhance group identity and co-operation, help to solve social dilemmas (especially common-good conflicts) allow for an identification with the person opposite, help to build up trust, encourage moral behaviour, provide cognitive skills, and bear the potential for new solutions and thus for compromise, reconciliation and conflict resolution (Kesting, 1998).

Is communication within a framework of political participation and methods of conflict resolution also a means to settle conflicts about regulatory takings and compensation? To answer this question, the possible content of such conflicts must be analysed. Conflict can centre on at least four points: (i) on the taking itself (is it justified, necessary?); (ii) on the kind and way of the taking (is it an expropriation, reduction of use rights, immediate or in the long term etc.?); (iii) on the compensation (is compensation paid, how much?); (iv) on the kind of compensation (lump sum, periodic payment, in-kind award, etc.?). Depending on the content of the conflict, various forms of communication and conflict resolution have been developed and applied in the last few decades (DeSario, 1987; Renn et al, 1995).

Methods allowing the discussion of various contested points are public hearings, citizen advisory committees and citizen panels or juries. *Public hearings* – inviting experts to hearings of a government or another body with a legal standing – are a traditional but not widely used method of political participation. Public hearings are usually unilateral though sometimes bilateral in their exchange of information and do not really provide a forum to discuss information and positions and to develop ideas (Webler and Renn, 1995). *Citizen advisory committees* are relatively small groups of citizens called together to represent attitudes of various groups or communities and to develop positions (e.g. zoning and planning committees) (Lynn and Kartez, 1995). *Citizen panels/juries* (also called planning cells) are groups of randomly selected people who are asked officially to prepare recommendations on problems of assessment, planning or control during a couple of days on behalf of legal decision-makers (Dienel and Renn, 1995). Apart from these approaches, other methods may be applied when the *kind and way* of the taking or the *kind* of compensation is disputed. These include regulatory negotiation and meditation. *Regulatory negotiation* is a method applied in the US in which administrative agencies bring together representatives of groups affected by a proposed rule in order to reach an agreement through consultation, mediation and negotiation (Fiorino, 1995). In *mediation*, parties involved in a dispute jointly explore and reconcile their differences with the aid of a mediator (Baughman, 1995).

Another structure which enhances political participation is direct democracy with instruments such as the referendum and popular initiative (Rippe and Schaber, 1999). Such instruments activate participation of citizens in political affairs and stimulate continuous discussion among them and with the political bodies (Frey, 1994; Anon., 1996). The perpetual possibility of referenda as a result of popular initiatives makes it likely that political bodies

will strive for decisions incorporating a broad consensus[7]. This necessitates participation of all groups concerned, the search for compromise, and communication with the voters. If regulatory takings and compensation can be subjected to popular vote (referendum), schemes will be devised which find support from a majority of voters. This will not exclude conflicts and public deliberation before the vote, but the vote should settle the mooted points allowing for political action.

Economists have given little attention to methods of conflict resolution but it is widely recognised that such matters are socially important and can affect economic productivity. Economists have, however, recognised that some methods of social decision-making, such as majority voting, not to speak of other conflict resolution methods – may not yield Paretian optimal outcomes (Arrow, 1951; Tisdell, 1991).

5. SWISS AND AUSTRALIAN EXAMPLES

5.1. Example 1: Agricultural Measures to Protect Biodiversity and Ecosystems in Switzerland

This Swiss example concerns the legal provision of compensation for farmers for a limitation of their property rights as a result of adopting particular measures to protect and enhance biodiversity and ecosystems.

Compensation issue

[7] For a lively description of the Swiss system, see Anon. (1996).

In Switzerland, the deterioration and destruction of cultural landscape and thereby of ecosystems and biodiversity due to agricultural land-use practices have been widely discussed and documented since the late 1980s, and have recently been stressed in a OECD report (OECD, 1998). Relevant land-use practices are for instance the use of agrochemicals, the modifications of landscape and removal of its structures (e.g. hedges, wood groves) and the practice of monoculture.

In order to diminish pressures on the environment, in a reform of the *Swiss Agriculture Act 1992* (amended 1998), financial compensation was introduced for ecologically favourable land-use practices. Amongst these are practices that particularly focus the maintenance and enhancement of ecosystems and biodiversity (Art. 76, Agriculture Act[8]) such as: low-input use of grassland; conversion of arable land into low-input grassland; and establishment and maintenance of hedges; shrubs and fallow land; wild flower-strips; set-aside areas; and standard fruit tree gardens.[9]

First claims for compensation for environmental friendly land-use practices date back to the late 1970s (Binswanger, 1977). In the 1980s, the unwanted consequences of an agricultural subsidy policy covering the cost of production to secure farmers' income had been increasingly criticised for financial, environmental and free-trade reasons. After a broad political discussion, the compensation mechanism for environmentally sound agriculture practice was devised as one element of a new Agriculture Act.

The adoption of this compensation regime is to date voluntary; however, the increasingly precarious income situation of farmers due to an overall reduction in agricultural subsidies

leads to many farmers accepting such compensation regimes. In 1998, SF 115 M (almost 3% of the Swiss agricultural budget) was spent for ecologically favourable land-use practices (Schelske, 2000).[10]

Political and institutional background of the compensation regime

In Switzerland, the federal government has the responsibility for agricultural policy. This policy has always been determined by various objectives of common interest (e.g. food security, correction of regional imbalances, support of mountain farming, acceptable income for farmers and – in the last two decades – environment and landscape protection).[11] Thus, Swiss agriculture is highly regulated, and limitations on property rights – in general on freehold land – are familiar to farmers.[12] The broad and evolving common interest has implications on the overall conception of the farmer's duty of care, which however is not a legal category in Switzerland. Yet, the overall wording of the 'duty of care' provision (e.g. in Art. 76 (2) of the Agriculture Act) gives some leeway to the legislator and to the administration in discussion and regulation.

Conflicting interests on land-use regulation and compensation

Public compensation for particular measures to protect the environment has been controversial for political reasons and in terms of principles. Concerning the former, farmers oppose the change in the financial composition of the agricultural support system. The

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8. *Agriculture Act* (1951-1998).

9 Such practices are compensated at SF 300 to 3000 ha/yr or SF 15 per tree (min. 20 trees). For more details see Schelske and Seidl (2000) and DZV (1999).

10 There are also more general ecological measures attracting compensation, e.g. organic animal production, integrated and organic production. The overall sum for compensation of ecological measures amounts to 18% of the agricultural budget.

11 For a history of Swiss agriculture policy, see Rieder and Anwander Phan-Huy (1994).

12 There is a large body of ecosystem (and biodiversity) relevant regulations on agriculture, such as laws concerning the protection of water and the Swiss nature and scenery, and laws on spatial planning, forests, and chemicals. An example for an important early taking is the forest law of 1902 that prohibits any reduction of forest area to protect against avalanches and mudslides.

conflict about principles centres on the following questions: (i) is the request for biodiversity and ecosystem enhancing farm practices a supplemental demand beyond the standard practice expected by farmers and thus requiring compensation, or (ii) do farmers have a duty of care that includes also biodiversity and ecosystem maintenance and thus does not warrant compensation? So far, no clear answers have been given either in politics or by the judiciary.

Two main parties are involved in this conflict. On the one side are farmers and farmer-related organisations (parties representing farmers, the agrochemical industry, agribusiness). Farmers are opposed to the new proposals and regulations, due to (i) additional costs, (ii) concerns about the long-term security of compensation payments, (iii) their desire to cling to the status quo, and (iv) the accompanying alteration of agricultural activity. The agrochemical industry and agribusiness support farmer organisations in a rather general and hidden way (financially, ideologically), lobby in favour of modern agriculture practice (e.g. against strict water standards) and publicly claim that modern agricultural practice complies with the duty of care. On the other side are environmentalists supported by groups bearing environmental costs of agriculture (e.g. waterworks, tourism sector, consumers). They ask for regulation because of conservationist and health concerns and for economic reasons. The broad Swiss public shares both positions. On the one hand, agriculture enjoys broad societal sympathy, and few publicly argue against the social consensus that Swiss small-scale farmers, especially those in the mountains, should survive and receive an acceptable income. Hence, a policy that would severely impair the income situation of farmers is not likely to be sanctioned by voters in an election or popular vote. On the other hand, the Swiss have a high level of environmental and ecological awareness and thus are offended by adverse ecological consequences of agriculture. This brief outline of the conflicting interests shows that (i) the conflict about property rights is strongly intermingled with the social and political issues, and

(ii) the positions expressed in politics, in the public and by various groups result from various interests, values and norms.

Political framework and power situation in Switzerland

In addition to this interest pattern, the Swiss government faces external obligations and internal political pressures. Various international treaties oblige Switzerland to reform its agricultural policy: obligations under the WTO compel it to reduce agricultural subsidies, while various environmental conventions and treaties (e.g. Biodiversity Convention, Convention of the Alps) demand the greening of agriculture, especially the protection of biodiversity and ecosystems. Domestic agriculture policy has been under crossfire for at least three decades because of the high public expenditure on agriculture (8-9% of public budget). However, public pressure is more to harmonise agricultural policy with societal objectives than to reduce the budget. This may coincide with a supposed interest of the public administrators of agriculture to retain a huge budget, with regulation activities, and thus maintain their power.

The compensation regime: a Swiss compromise

The present compensation regime is a result of societal demand, the political and power situation, and the Swiss consensus culture. In the long process of discussion and devising the compensation regime, welfare economic considerations may have been given little attention. For instance, there has been no cost-benefit analysis, and ecological assessments have only recently commenced. Consequently, whether a regulatory taking would be welfare-enhancing and whether the Kaldor-Hicks principle is applicable (change is justifiable even if no compensation is paid) is difficult to determine. Yet, it seems likely that the environmental regulations improve social welfare, because environmental costs, agricultural output and the

subsidies for price pegging and export support all decrease. The Kaldor-Hicks compensation criterion seems likely to be satisfied. However, considerations of fairness and the political power situation have led to a compensation regime based on voluntary contracts. Also, the amount of compensation does not follow any welfare economic consideration (externality or market price) but is fixed in accordance with social goals, i.e. it is related to farmers' incomes and former subsidies (Schelske and Seidl, 2000).

The compensation regime exhibits a variety of advantages. Farmers are not forced to accept a reduction in their land-use rights but can agree upon this intrusion while being compensated. Yet, in the long run, they will have little option but to accept such intrusions if they want to limit the decline in their income. Further, the government has created a situation which more or less satisfies its international obligations and satisfies most voters. Also, environmentalists and the public have benefited due to the introduction of ecological regulations, with little or no conflict with the farmers (although some environmentalists criticise the regime as ecologically inefficient and insufficient). Finally, taxpayers do not oppose the measures because little additional funding is necessary to support agriculture due to the redirection of subsidies.

Without doubt, self-interest of the stakeholder groups, politicians and public servants have influenced the outcome. Yet, the compensation regime is a result of various interest claims and the awareness that a compromise had to be found. The question remains whether a solution could have been found that is closer to a Pareto-optimum.

Conflict resolution mechanisms have played an important role in arriving at this widely accepted compensation regime. There have been numerous public hearings on the issue of

agriculture, ecosystem protection and assurance of farmers' incomes. Possibly the most important influence in this respect has been the Swiss system of basic democracy which enables citizen to initiate referenda. This is so even though most initiatives in this regard are withdrawn without leading to a referendum. However, this system encourages public discussion and leads to tight contacts between politicians and society, the stakeholders concerned, and forcibly leads to solutions that satisfy a majority – otherwise the proposals would be rejected in a vote.

5.2. Example 2: Native Vegetation Clearance in Queensland, Australia

This example concerns the provision of compensation to landholders for new legislation and regulations limiting property rights with respect to clearance of native vegetation in Queensland, Australia.

Compensation issue

The clearance of native trees and shrubs by farmers, and their rights on freehold and leasehold land, has been a major controversy in Queensland during recent years (e.g. Tisdell, 1999; MacDonald, 2000; Dickie, 2000). Although regulatory control over broad-scale clearing of leasehold land (> 50% of the land in Qld.) was introduced in 1962 (*Land Act*, amended 1994), so far there has been little impediment to tree clearing. Up until the early 1970s, taxation deductions were provided for 'timber treatment'. From about 1990 environmental groups strongly campaigned to curtail tree clearing but governments have been wary to impose strict controls. In 1999, clearing reached a 10-year high, of more than 400,000 ha (ABC, 1999), 81% of Australia's land clearing. The reason behind this increase seems to have been the fear by landholders of imminent repressive legislation. Landholders

clear vegetation primarily to extend or improve pastures, but also to control regrowth and to harvest timber; there is also clearing for urbanisation and mining.

Institutional and Political Background of Regulation and Compensation

The government of Queensland has responsibilities under the *National Framework for the Management and Monitoring of Australia's Native Vegetation* (Commonwealth of Australia, 2000) that aims at reversing the decline in natural vegetation. In December 1999, the Queensland parliament passed the *Vegetation Management Act* through the parliament.[13] The Act is designed to be consistent with the National Framework. Gazettal into law was delayed until October 2000 pending financial support from the federal government to provide incentives and compensation to landholders concerned (A$ 103 M were sought). However, in the National Framework (p. 28) it is argued that compensation arrangements are generally not favoured because of the potential to set a legal or political precedent. ... However, compensation payments may be justified in situations where an individual landholder is involuntarily forced to manage vegetation at a standard higher than that required of other landholders". The National Framework (p. 17) also states that landholders are considered to have a duty of care with regard to management of native vegetation and to provide a non-marketable public conservation service (the duty of care is said to be defined by existing property rights such as legal institutions, legislation and regulations). Thus, the federal government seems to be wary of compensation. The laws and regulation on vegetation clearance and compensation reflect the overall controversies and ambiguities. Hence, the property rights situation and thus the eligibility for compensation is not clear-cut at all, which may in part bear upon the conflicts involved.

Conflicting interests on land-clearing and compensation for management regulation

Different conflicts hide behind the vegetation clearance case. The first is whether the Commonwealth has to provide financial means for a regulation it imposes to the state (National Framework). The Commonwealth, in principle, is opposed to compensation, but acknowledges the difficulties of restricting private property rights. Second, there is the conflict at the Queensland level that has different dimensions. On the one hand, landholders and their lobby groups stress their customary and property and rights and are opposed to any regulation, whereas superficially, the conflict seems to turn on who has to compensate (State or Commonwealth). This impression is strengthened by the fact that the Queensland government sought financial assistance from the Commonwealth. Hence, in reality the Queensland government is ready to limit property rights, but with compensation. On the other hand, the necessity of compensation is questioned by environmentalists and their supporters who stress the foolishness of earlier clearings, the duty of care, societial demand for nature conservation, the external cost due to soil loss, siltation of watercourses and increased incidence of soil salinity.

Concerning the position of the landholders, their claim for their property rights is mingled with other complaints: (i) about not being consulted by the government and the political and bureaucratic processes of developing and passing the Vegetation Management Act, (ii) about land management practices being imposed and the considerable uncertainty of the legislation, and (iii) about becoming vulnerable to a deterioration in their livelihood (ABC, 2000).

[13] The *Vegetation Management Act* provides for protection of remnant regional ecosystems (endangered and of concern) and of interesting and endangered vegetation, for avoidance of land degradation through clearing, maintenance of biodiversity and ecological processes, and ecologically sustainable land-use (Part 1, 3.1).

Though the Queensland government is aware that 'the level of clearing on both freehold and leasehold land is unacceptable', both ecologically and economically (ABC, 1999), it accepted this situation and delayed introduction of the legislation for nine months to avoid a confrontation with landholders and to put pressure on the Commonwealth for compensation. When the later strategy did not work out, the State Government gazetted the Act, deleting the category 'area of concern', so that the legislation now applies to only about 5% of the State instead of 25% as previously planned. Compensation will be provided by the Queensland government where the legislation reduces property values, but the overall compensation cost is expected to be small (Briggs, 2000).

Political framework and power situation allows for reciprocal pressurising

The distribution of responsibilities between the Commonwealth and State Government concerning the vegetation clearance is such that the former has responsibility for land and has obligations from international law and treaties whereas the later is responsible for land-use decisions and vegetation management. Moreover, the state is a large owner of areas of native vegetation. The resulting power relationships led to the earlier standstill in enacting the *Vegetation Management Act*. The Commonwealth government threatened the State government with withdrawing money from the National Heritage Trust (A$ 38 M) (ABC, 1999). On the other hand, by imposing only mild controls on land clearing, the State government obstructed the Commonwealth obligation to reduce land clearing and thus to limit CO_2 emission as intended in international arrangements such as the Kyoto protocol (for which details have still to be negotiated). Further, in the face of a one-seat parliamentary majority, the Labour State government tried not to offend the landholders and thus passed the buck to the Commonwealth.

Discussion and outlook

Seemingly, welfare economic considerations have been given little attention in this political case. No reliable estimates are available of the costs imposed by the legislation nor of the benefits. Thus, it is not clear whether from a welfare economic point of view a regulation is justified, and furthermore whether the Kaldor-Hicks principle should be applied.

Specific aspects of the conflict can be explained by the economic theory of politics. For instance, the fact that the Queensland government delayed gazetting the Act into law seems to bear upon the fact that the farmers are a well-organised group with heavy interest in clearing. The farmers are located in a number of marginal electorates on which the Queensland government at the time relied for its majority in Parliament. On the other hand, the Queensland Government tried not to loose non-farmer votes. This calculus – which is substantiated by the neoclassical theory of politics considering voting-behaviour as myopic and rather self-interested – has been shown to be well judged, with the Labour government gaining a majority of about 50 seats in the 2001 election. Finally, the Queensland Government might have considered itself in a strong bargaining position in relation to the Federal Government which is obliged to fulfil international obligations (e.g. Kyoto protocol) and thus might have been amenable to making concessions (but decided to tough it out). Delay in gazettal of the Vegetation Management Act was not acceptable to the various stakeholder groups (except for the farmers). Pressure on the Commonwealth government led to establishment of a taskforce to examine other ways of assisting rural land management in Queensland, and new initiatives have been taken to restore credibility of the federal government in rural areas, such as additional support for salinity control.

One strategy of the State government may have been that the longer an agreement between the Commonwealth and State government were delayed, and the more clearing took place, the weaker would be the opposition once the legislation came into effect, and the lower the compensation amounts which will be accepted by landholders. Thus, the final amount of compensation also is a political outcome, and delaying the gazetting has been one ingredient to of this final outcome.

Conflict resolution mechanisms seemingly have not been taken up. The exchange between the Commonwealth and the State government seems to have been mainly a exchange of power: who has more staying power? Also, farmers complained that they have not been listened to nor have their concerns been taken up by the State Government. It is highly probable that mechanisms of conflict resolution might have taken months or years to reach to a satisfying result but it is as probable that such a result would have been environmentally more satisfying than the present solution and the high rate of land clearing of the last two years may have been at least partially avoided. Also, the present solution is by no means a cure to the major environmental problems of land degradation and biodiversity loss.

6. CONCLUSIONS

Economic questions regarding regulations of land-use and compensation and an increasing number of conflicts led to this investigation of three theoretical approaches to compensation policy (new welfare economics, neoclassical theory of politics and theory of social conflict resolution) and two relevant case studies (Swiss agricultural measures to protect biodiversity and ecosystems, native vegetation clearance in Australia). The findings are humbling with

regard to the first two theoretical approaches. New welfare economics and the neoclassical theory of politics provide only partial guidance and explanation for regulation and compensation. Once more, new welfare economics proves to be inadequate for policy (cf. Samuelson, 1950; Little, 1957) – in this case conservation policy. The neoclassical theory of politics is only able to explain some features of regulation and compensation regimes *ex post*, with little contribution to prediction nor guidance to politics.

A search for an approach to settle conflicts on environmental regulation and compensation leads to the flourishing literature on conflict resolution. This body of theories and empirical approaches provides a theoretical framework about the potential and areas of application, and offers procedures for conflict resolution. Proponents argue this brings about a particular 'productivity', although the gains are difficult to observe.

The two case studies about rural land-use regulation give a glimpse of the complexity of the conflicts. Indeed, various interests are involved and social, historical, procedural factors arise. Further, a close relation between rural land-use and justice becomes obvious. Thus, the traditional narrow field of economics is rapidly overstepped. Interestingly, in both case studies, no economic valuations have been carried out. Rather, the question whether compensation is paid and how much was settled solely in a political way, and this appears to be the case for various other Swiss and Australian case studies (Tisdell and Harrison, 1999; Schelske and Seidl, 2000). Another observation is that no distinction is made between compensation for takings and incentive measures. Rather, compensation is viewed as one of the cost-sharing incentive instruments available for inducing farmers to refrain from ecological degradation. All in all, the case studies showed that complexity in land-use

decisions calls for participatory proceedings, discourse and a search of consensus. Vicarious planning does not suffice; civic participation is needed.

The revealed inadequacy of economic theory can be explained by various factors. New welfare economics separates production and distribution and blinds out the latter; thus, as soon as distribution and justice are at stake, this theoretical body is inadequate or mute. Further, the idea of Paretian compensation fails with the difficulties to calculate damages and thus the amount of compensation. Finally, temporal dynamics, the change of values and preferences is not taken up; nothing is said about how to deal with customary rights nor with conflicts. At the same time, the neoclassical theory of policy works with behavioural assumptions that are out-dated. Together with its ignorance of institutional and social dynamics and settings, the explanation of political decisions is restrained to highly constrained arguments.

The findings of the case studies suggest that the fundamental question of property and use rights probably can never be resolved in a permanent sense, because values and contexts change. Seemingly, temporal solutions have to be found that satisfy all parties concerned and give security with regard to economic activities and livelihood. Such aspects were guaranteed in the Swiss case study and led to a relatively smooth introduction of the ecologically friendly compensation regime. Conflict resolution on the basis of direct democracy has taken place. However, this system also results in regulatory taking, especially without compensation, being rare. Rather, management agreements (voluntary solutions) are developed that apply country-wide. This coincides with an overall tendency in nature conservation to close deals of easements (OECD, 1999). The conflict resolution through discourse and the search for consensus (in the Swiss case study through basic democracy) could hold important lessons

for Australia and other countries – this the more as high environmental standards seems to result (OECD, 1998). With regard to the Australian case study, non-settlement of the dispute probably led to the major circumcision of Vegetation Management Act. The fiscal impact of the solution may be low, but the environmental cost of degradation through vegetation clearance continues.

In democratic societies, governments directed by politicians are not free to regulate land-use and design compensation for the taking of land rights in a sovereign capacity independently of societal acceptance of their actions. In fact, with the continuing evolution of democratic societies, contractual arrangements based on sets of social conflict resolution procedures are becoming more prominent. This should induce new welfare economics to broaden its traditional scope and tackle real policy problems and it should motivate the neoclassical theory of politics to revoke its limited behavioural assumptions. These theories may lose logical purity, but at the same time gain greater political reality.

The case studies for Australia and Switzerland show that the complexity of environmental regulation of rural land-use and public compensation for the taking of property rights calls for participatory proceedings and approaches to conflict resolution and communication. In the Swiss case study greater participation of citizens in social decision-making takes place than in the Australian. This seems to be the reason for a successful settling of the conflict and a high environmental standard in Switzerland. The case studies also show that the Australian socio-political system has not evolved to the same level of participatory democracy as the Swiss one, therefore, may be less effective in settling social conflict, and could result in inferior social welfare outcomes, such as those arising from failure to settle environmental disputes. Be that as it may, this article indicates that the theories of welfare economics,

politics and social conflict resolution vary considerably in their relevance depending on the institutional setting in which they are to be applied, and this institutional setting itself is largely a product of history. In turn, this implies that institutional settings are highly path-dependent and that transaction costs make them somewhat rigid or inflexible. Thus, Australian democratic institutions cannot be readily transformed into Swiss ones, even if it is agreed that this would confer social advantages.

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