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**Autor:** Sciarini, Pascal

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## ELABORATION OF THE SWISS AGRICULTURAL POLICY FOR THE GATT NEGOTIATIONS: A NETWORK ANALYSIS\*

*Pascal Sciarini*

Department of Political Science  
University of Geneva

### Introduction<sup>1</sup>

The Swiss agricultural policy was put to a difficult test by the negotiations of the Uruguay Round, the eighth of its kind conducted under the auspices of GATT. The main objective of this article is to evaluate, from a structural point of view, the pressure to which these negotiations gave rise for a policy network accustomed to preparing the Swiss agricultural policy. To describe the structural morphology of the domestic policy network, I make use of the tools of network analysis, which is based on an empirical survey conducted among the main decision-makers of agricultural policy in August and September 1990, i. e. in the crucial phase of the drafting of the Swiss offer for what was expected to be the last phase of the Uruguay Round.

This article begins with a brief discussion of the concept of policy network. I then present a classification of policy networks, which will serve as an interpretation model for my case study. The second part analyses the structure of the domestic policy network responsible for elaborating the Swiss agricultural position during the Uruguay Round. First I look at the distribution of power within the network and compare it with the situation prevailing in the domestic agricultural policy and in the foreign economic policy. This distribution of power is itself linked to the structure of formal and informal collaboration, exchange and conflict networks, and to the position of the actors and groups of actors in these structures, who are also the subject of a detailed examination.

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1 This article presents several theoretical, methodological and empirical elements of the research conducted as part of my doctoral thesis (Sciarini, 1994) which also includes a systematic comparison of the Swiss case with that of Austria, the findings of which are not reported on here.

In the third part, I undertake a theoretical interpretation of the structural morphology of this policy network, and I compare this formal and static analysis with the empirical reality of the process of domestic negotiations. I then discuss briefly, in conclusion, the advantages and limits of network analysis for studying the elaboration and implementation of public policies.

## 1. Analytical framework

In my view, close to that of Kriesi (1994, 19–22), a policy process is determined by a framework (the formal institutions and the informal procedures) and by a structure (the cleavages within the society and the elite), which take the form of a certain type of power configuration in a given policy network. The strategies and actions brought into play by the actors within this network determine in turn the results of the political process. The power configuration plays a central role in this model, in that it links institutions and structure, on the one hand, and centres of the negotiating process, strategies and actions of actors, on the other.

### 1.1 *Network analysis and policy networks: conceptual clarification*

Like other theoretical concepts or methodological tools that are “in”, the concept of “policy network” is a victim of its success. Polysemantic employment, purely metaphorical use, normative shifts: these are only a few of the misadventures that this latest development of political science has undergone. A few years ago, the hope was voiced that the concept of policy network might serve to reconcile two families of research in the social sciences: policy analysis and the analysis of relational configurations, known as network analysis or structural analysis.<sup>2</sup> This hope was based on the idea that the study of the elaboration and implementation of public policies might benefit from the vast array of conceptual and methodological tools available to network analysis (notably Berkowitz, 1982, Burt, 1982, Knoke and Kuklinski, 1982, Scott, 1991, Degenne and Forsé, 1994 and Lazega, 1994). But it is not enough to proclaim that the two systems of research complement each other to give substance to the concept of policy network (Lehmbruch et al., 1988, 279). On the contrary, here is where the difficulties begin.

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2 That was the objective of the conference held in 1989 on “Policy Networks: Structural Analysis of Public Policy Making”. In the introduction of the work that incorporates most of the statements made, Marin and Mayntz (1991, 12) recognize, however, that they had abandoned all efforts to achieve homogeneity, in favour of a book meant to reflect the imperfect “state of the art” in this area.

In political science studies, the concept of “policy network” was first used to describe in a metaphoric fashion a structure of relations bringing together public and private actors.<sup>3</sup> Attempts to produce a theory then proposed defining policy networks as a specific societal organization situated somewhere “between” a “market” type and a hierarchical type “structure” (particularly Kenis and Schneider, 1991, 40–41). This definition would appear to be inappropriate. Firstly, it overlooks other models for the organization of social life with which policy networks might be compared.<sup>4</sup> Secondly, it is opposed to network analysis, in which the concept of network refers in a purely analytical manner to any structure of relations between persons, organizations, events etc. If the political scientists’ line of reasoning is followed, which largely ignores sociological tradition, it is difficult to see how this would contribute to the effort to focus upon joint conceptual definitions.<sup>5</sup> This is why I plead, along with other authors (notably Van Waarden, 1992, 31, Jordan and Schubert, 1992, 12), for a return to a generic and neutral notion of policy networks, defined as complex and varied forms of interaction between public and private actors.

This choice opens the way to making the most of the analytical potential of the concept of “policy network”, in particular by elaborating classifications of policy networks. By nature, a classification has a slight disadvantage from the point of view of empirical use, in that the theoretically established categories are never present in such a pure form in reality. But a comparison of an existing policy network with the theoretical models shows which “ideal type” this most closely resembles and, as a corollary, makes it possible to anticipate with some precision the probable outputs of the process, it being understood that such outputs are still determined by the strategies pursued by the actors.<sup>6</sup>

Accordingly, I am most particularly interested in the conditions conducive to introducing innovation into the system, i. e. the question of the “goodness of fit” between a new policy strategy and the established power configuration (Döhler, 1991). The degree of compatibility between the constraints and opportunities of the policy network structure concerned and the “new policy” is inferred on the basis of the empirical confrontation of the two elements. In the event of incompatibility, one can, with Döhler (1991), advance the hypothesis

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3 For a review of the literature on the origins and dissemination of the concept, see Kenis and Schneider (1991).

4 For a more in-depth criticism, see Sciarini (1994, 65–67).

5 A first step in this direction was taken by a number of articles in the special issue of the *European Journal of Political Research*, 21, 1992, devoted entirely to policy networks.

6 This approach is again compatible with the idea, which is that of networking analysis, of the structure as the context of the action (Lazega, 1992, 562).

that the introduction of a political innovation requires the modification of the configuration of power within the network.<sup>7</sup>

When analysing networks, the formalization of relational constraints and opportunities that directly and indirectly affect the behaviour of members of the structure involves measures relating to the network as a whole (for example, density and centralization), the individual actors (for instance various centralizing measures, prestige) and groups of actors. In network analysis, a “position” or “class” of actors draws upon a sub-set of actors integrated into the system in the same fashion, typically according to how closely their ties are *among themselves* (“clique”) or according to their ties with *other* actors (“structural equivalence”): the actors are said to be “structurally equivalent” if they have a similar relational profile, regardless of the relations that they may have among themselves.

## 1.2 *A classification of policy networks*

The construction of a classification of policy networks presupposes the prior identification of the relevant dimensions of the concept. One category of classification regards networks as a function of the interaction of structural characteristics of public and private actors involved in the network or, to put it differently, as a function of the network’s “structural preconditions” (in particular Atkinson and Coleman, 1989; Lehner, 1988; Kriesi, 1994). Other authors build their classification more directly upon the basis of a conceptualization of the characteristics of relations existing between actors, i. e. using a reasoning more akin to that of network analysis.<sup>8</sup> This is the case with Van Waarden (1992), whose classification, although very complete, suffers from a complexity that is hardly adapted to an empirical application.

For this reason, I prefer to rely on the classification developed by Kriesi (1994, 392–396), which in turn is based on the general hypothesis formulated by Schmitter (1982, 262 f.), according to which there is a close correlation between the two models of structural organization of systems of interest groups

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7 This hypothesis introduces a somewhat dynamic element into the static conception typical of the structural analysis. One might add that the introduction of an innovation into the network only constitutes a first phase in the development of a new political programme, for example a reform of a public policy. If this innovation is to be “disseminated” throughout the network, the (new) configuration of power must be able to be “stabilized” and/or the network’s public and private actors benefit from a “learning process”.

8 Instead of proceeding on the basis of the particularities of the individual actors in order to deduce the structure, structural analysis focuses first on patterns of relations between individual actors in order to assess what effects these patterns have on the actors’ comportment (Wellmann and Berkowitz, 1988, 3).

– corporatism and pluralism – (Schmitter, 1974) and the two models of relations between the State and interest groups in a political process – concertation and pressure – (Lehmbruch, 1979): according to Schmitter, corporatism is linked to concertation, and pluralism to pressure. Kriesi completes this hypothesis by adding as a precondition for establishing a certain type of network the concept of state strength.<sup>9</sup> The theoretical encounter between the structure of the system of interest groups and state strength produces four types of policy networks, each with its own characteristics and properties. I shall present this classification (Table 1), together with the characterization of the various relational configurations with the help of the concepts of network analysis.<sup>10</sup>

In the case of a policy network of the *concertation* type, the strong structuring of the public and private actors reduces the number of persons concerned on both sides, restricts access to the network and facilitates the exclusion of newcomers. The network is not very dense but is highly centralized around the main private actors (typically the peak associations) and state bodies, which have stable, global and symmetrical relations. The intermediary groups are in a position to take part in the decision-making process irrespective of the immediate interests of their members (subordinate groups), who are probably in a position of structural equivalence, given their joint dependence with regard to the interest group that represents them. Lastly, cliques may appear at various levels of the network, particularly between the peak associations and state bodies.

Conversely, where the State is weak and the system of interest groups poorly developed, a policy network implies a large number of public and private actors. This network is unstable and relatively open; the points of access to the public administration are numerous, and each actor can reach almost every other in very few steps. The density of the network is thus high, but it is not very centralized. Moreover, the fragmentation and the interlocking of relations are an obstacle to the formation of structural equivalence, but favour the proliferation of cliques. This example is the classic situation of *pluralism*, which Schmitter suggested calling *pressure*. In this model, the private actors compete in their efforts to influence policy and are generally not included in implementation.

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9 Alive to the criticism sometimes levelled against the neo-corporatist paradigm (in particular Birnbaum (1982)), i. e. the failure to take the idea of the State into account, Kriesi (1994) rightly stresses that Schmitter's hypothesis lacks balance, because it disregards state structures, which are decisive for the form that relations between interest groups and the State take.

10 Schneider (1992) follows a similar approach, by characterizing the structure of three typical ideal forms of policy networks (pluralism, corporatism and a patronage system) with the aid of a number of concepts and measures of network analysis.

Table 1  
Classification of policy networks according to Kriesi (1994, 395)

<i>Structure of the system of interest groups</i>	<i>State structure</i>	
	Strong State	Weak State
Highly developed (corporatist)	<i>concertation</i> – few actors – closed – centralized – global – stable – symmetrical	<i>sector-based cooperation</i> – many public, few private actors – closed – decentralized – fragmented – stable – very weak State: <i>clientelism</i> – relatively strong State: <i>sector-based concertation</i>
Poorly developed (pluralist)	<i>intervention</i> – few public, many private actors – closed – centralized – selective – unstable – asymmetrical	<i>pressure</i> – many actors – open – decentralized – fragmented – unstable – symmetrical

The combination of a system of highly developed interest groups and a weak State produces a network in which the actors are few in number on the side of the interest groups, but numerous on the side of the State, which enables private actors to take action at several different points and levels. The intermediary groups, of central importance to the network, are in a position to restrict access to the other actors of society. As in the case of concertation, the relations are stable, but decentralized and fragmented, owing to the structural weakness of the State. The network's density is higher than that of the case of "concertation", but less than that of the case of "pressure". Structural equivalences can be identified in particular at the level of the subordinate groups, owing to their joint relations with the association that represents them. Furthermore, the relations have a tendency to be confined to a sole policy area, and the policy networks in other areas are neither linked nor coordinated with each other. To the extent that *cooperation* is *sector-based*, the characteristics of the network vary from one policy domain to another, especially according to

the structure of the state actor. Kriesi (1994, 394) distinguishes two variants: if the State is very weak, it may be taken over by private interests. In such cases, one speaks of a *clientelist system*, the office of the State concerned officially retaining responsibility for policy in the area, but defending special rather than public interests. Owing to the predominance of dual relations, cliques and structural equivalence are expected between the public-private actor pairs. If the State is relatively strong, this then concerns a *sector-based concertation*, i. e. a type of policy network that makes for a global coordination that affects all aspects of sector-based policy.

Lastly, where the State is strong and the system of interest groups is poorly developed, the number of state actors is limited, and there are many private actors. But the State, which controls how open the network is, has an interest in restricting access to it. It imposes a centralized and relatively dense network, but which is neither stable nor global. In this case, the State is itself able to establish the link between the various issues, even though the private actors concerned only represent partial and short-term points of view. The weakness of the latter prevents real negotiations and allows the State to decide whether – and whom – it consults. Under this form of network, termed *intervention*, the relations are clearly asymmetrical and unstable. The centrality of the State favours structural equivalence at the level of the intermediate groups, given the ties created with state bodies.

### 1.3 *The Swiss agricultural policy: a case of sector-based cooperation*

During the period extending from the 1950s to the mid-1980s, the network of the Swiss agricultural policy presented the structural traits and particularities of the “sector-based cooperation” model, i. e. a combination of a relatively weak State and a system of highly developed interest groups.<sup>11</sup> Although less pronounced in this sector than in others, the relative weakness of the State was obvious. There were three reasons for this: the State was dependent on the agricultural associations for technical information, expertise and statistics; it was reliant upon the private associations in the sector, to which the referendum instruments gave considerable power in the elaboration of decisions; and it did not have the means of implementing complex interventionist measures and was also dependent at this stage on private or semi-public actors. Consistent with the “sector-based cooperation” model, this network also exhibited very stable relations between public and private actors, was scarcely open to the

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<sup>11</sup> This is the conclusion that I arrived at on the basis of a compilation of various earlier works (Sciarini, 1994, 170–187) in the area (see Halbherr and Müdespacher, 1985, Jörin and Rieder, 1985, Rüegg, 1987).

outside, and had what was essentially a sector-based scope: the traditional “division of labour” in Switzerland between the sectors of the economy with an international and those with a domestic orientation was coupled with the virtually unanimous recognition of the special status of agriculture. Moreover, the national organization of producers in this area, the “Union suisse des paysans” (Swiss Union of Farmers – USP), was very influential, highly structured, very well organized, and in possession, as the representative of the sector, of an extensive monopoly and considerable power in the network.

The agricultural policy was thus the product of a coordination of interests between the most powerful organizations of the sector (Halbherr and Müdespacher, 1985, Rüegg, 1987). As a result of this power configuration, the innovative capacity of the Swiss political system was very limited in this sector. For a long time, the actors who benefited from the agricultural regulation in place on the various markets (the major producers, on account of the policy of income supports through pricing, but also the importers and processors, through various interest compensation mechanisms) had the power to deflect proposals for reform which would have led to a decline in their profits. The main victims of this policy were the consumers/taxpayers and small producers.

The inertia of the political system in the agricultural area was all the greater owing to the presence of semi-public institutions in the implementation phase (Jörin and Rieder, 1985, Linder, 1987, 111–127) as well as to the role of Swiss neutrality and direct democracy. The goal of food security, invariably perceived from the viewpoint of the contribution of agricultural production to the policy of neutrality, constituted a powerful justification for continuing an interventionist and protectionist agricultural policy. The agricultural policy is an exemplary case of the indirect effects to which, according to the hypothesis of Neidhart (1970), referendum instruments give rise: development of concertation in the pre-parliamentary phase, inclusion of all actors who might threaten to call for a referendum and production of limited compromises and a parliament reduced to the role of “rubber stamp” (Rüegg, 1987, 21) were all typical aspects of the agricultural policy decision-making process until the mid-1980s (Halbherr and Müdespacher, 1985, 28–30).

This power configuration prevailed until the emergence of two fundamental challenges to the Swiss political system: European integration and the Uruguay Round of the GATT negotiations, two challenges that provide a spectacular illustration of the new constraints placed upon the Swiss political system by the “internationalization” of domestic policy – brought about by the growing interpenetration of issues and by the fact that the international economic negotiations increasingly concern areas that in the past were subjects of national autonomy.

## 2. The structure of the domestic policy network

Various studies prior to this one have made use of the tools offered by network analysis to describe and analyse the structures that govern the elaboration and implementation of political decisions (see in particular Laumann and Pappi, 1976, Kriesi, 1980, Laumann and Knoke, 1987, Schneider, 1988, Schneider and Werle, 1991, Pappi and Knoke, 1991). Drawing upon these studies, I also share in my approach the objective of a structural policy analysis (Knoke, 1990, 9), i. e. that of explaining the distribution of power among the various actors as a function of the position they hold in one or more networks.

### 2.1 *The distribution of reputational power*

A network analysis applied to a public policy usually begins by delimiting the system of actors and identifying the power structure. Used together with the positional and decisional approach to delimit the system of actors (Sciarini, 1994, 85–93),<sup>12</sup> the reputational approach is also turned to account to identify the distribution of power within the network. The principle of the reputational approach consists in identifying, through a survey based on a questionnaire, the actors considered to be the most influential within a given policy domain.<sup>13</sup> A list of the 68 actors or decision-making bodies was presented to 40 persons – representing the most important interest groups, administrative services, political parties etc. – questioned during my survey, who were asked to indicate which actors or centres were “*very important*” in three different cases: agricultural policy, foreign economic policy and the defining of the Swiss agricultural

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12 Delimiting the system of actors is a difficult problem that also greatly influences the characteristics of the network being analysed (Scott, 1991, 59). How and where should the system be closed? How can it be decided which of the possible definitions of the system is best for exploring a given phenomenon (Berkowitz, 1982)? The combination of the positional, decisional and reputational approaches is best suited for overcoming that difficulty: the first method of the three selects the actors according to the position that they hold in the system, the second identifies the direct participants in the decision-making process, and the third according to the influence that they are reputed to have.

13 This method does not constitute an exploration of the real power of an actor, but a sort of opinion poll on his power. This poses the problem of subjectivity inherent in this type of survey: the definition of *power* being likely to vary from one respondent to the next, can it be said that reputational power provides a faithful reflection of the actual balance of power? In my view, it is legitimate to assume that the members of the elite of a policy domain are in the best position to evaluate the distribution of power in that domain. For other applications of this approach, see in particular Kriesi (1980, 315 f.), Laumann and Knoke (1987, 163 f.), Schneider (1988, 165 f.).

policy for the GATT negotiations. The actors were then classified according to the total number of votes they received.<sup>14</sup>

The examination of the distribution of reputational power provides an initial series of indications as to the pressures that arose in the Uruguay Round negotiations. I shall confine myself here to presenting several findings relating to the most important actors (Table 2).

Table 2

The most important actors (gross score of reputational power, N = 40)

	<i>GATT agriculture</i>	<i>agricultural policy</i>	<i>foreign economic policy</i>
1. Federal Office of Foreign Economic Affairs (OFAEE)	37	11	36
2. Swiss Farmers Union (USP)	31	37	13
3. Federal Office of Agriculture (OFAG)	28	37	3
4. Federal Council (Swiss Government)	24	22	20
5. Swiss Union of Commerce and Industry ("Vorort")	23	9	37
6. Swiss delegation to the GATT negotiations	21	2	11
7. GATT-agriculture working group ("Piot Commission")	19	3	-3
8. GATT Liaison Group	14	0	0
9. GATT agricultural working group of the administration	14	0	-3

This picture shows that the distribution of power that characterized the elaboration of the Swiss agricultural position during the GATT negotiations differs noticeably from that which usually prevails for the domestic agricultural policy and leans towards that of the Swiss foreign policy. On the basis of the criterion used by Kriesi (1980, 316 f.), i. e. the choice of at least half of the persons questioned, the core of power in the context of the GATT agriculture issue in Switzerland

<sup>14</sup> Attractive because of its simplicity, this method does not, however, take account of the number of positive replies given, which may vary greatly from one respondent to another (Schneider, 1988, 165 f.). To offset any variation, I have constructed a stochastic matrix by line, in which the perception of the power of an actor j by an actor i is divided by the sum of the votes by i. The votes of the actors who consider many actors to be very important thus receive less weight than the votes of actors who designate a smaller number of actors. The results obtained by this second method are very similar to those observed by simply totalling the votes, which shows that there is to some extent a consensus on the actors who should be regarded as very important.

is in fact composed of two pairs of crucial public/private actors: the Federal Office of Agriculture (OFAG) and the USP for the agricultural sector, and, for foreign economic policy, the Federal Office of Foreign Economic Affairs (OFAEE) and the Swiss Union of Commerce and Industry (“Vorort”), together with the Federal Council and the Swiss delegation to the GATT negotiations. The position of the OFAEE<sup>15</sup> and of the “Vorort”<sup>16</sup>, both well-known proponents of free enterprise, gives an idea of the novel character of the domestic configuration and pressure that was placed upon the agricultural sector.

Secondly, and although this does not appear in this partial presentation of results, the concentration of power is much more perceptible in the GATT agriculture issue in Switzerland than in domestic agricultural policy.<sup>17</sup> Apart from the centres specifically associated with the negotiations of the Uruguay Round, such as the ad hoc working group GATT-agriculture (known as the “Piot Commission”)<sup>18</sup>, the GATT agricultural working group of the federal administration and the GATT liaison group,<sup>19</sup> which in a manner of speaking constituted the defenders of a liberalization, the other actors seem secondary, even insignificant. Generally speaking, this phenomenon of tightening of power is to the benefit of the state actors<sup>20</sup> and prejudicial to the private agricultural actors, who also suffer from the withdrawal of their traditional supporter within the administration (the OFAG). It should, however, be noted that the interests of the agricultural producers are not totally excluded from power in the GATT issue, because their national representative – the USP – is

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15 From a formal point of view, the distinction introduced between the various actors gravitating around the OFAEE might be contested, since the Swiss delegation to the GATT negotiations and the GATT agricultural working group were composed primarily of OFAEE officials. This point aims to identify as precisely as possible the power and collaboration structure.

16 In the context of the GATT negotiations, the “Vorort” is not only concerned with agricultural policy on behalf of its members active in later phases of production (the food industry in particular), but more fundamentally as the peak association of commerce, services and industry. In that sense, it has an overriding interest in the success of the Uruguay Round negotiations.

17 This concentration is seen in the very pronounced change that can be observed as soon as one moves away from the core. It is confirmed by the comparison of distributions: in the GATT agriculture issue in Switzerland, one fifth of the most important actors received 83% of the positive votes, against 76% in foreign economic policy and only 52% in agricultural policy.

18 Composed of the main private actors of the economy (USP, Vorort, UCPL) and the administrations (OFAG, OFAEE, Federal Administration of Finance) concerned, this commission was charged of analyzing the effects of the negotiations on the Swiss agricultural policy and preparing proposals to the Swiss delegation to the GATT, for example on import barriers, export subsidies and price policy.

19 This group united the main associations of the economy and the offices of the administration in order to ensure that the social and economic partners were continuously informed about the progress of the entire Uruguay Round.

20 In this case, the state actors received 57% of all the positive votes cast, against 35% for foreign economic policy and 22% for agricultural policy.

well positioned in the core. Other major actors in domestic agricultural policy, such as the big distributors, seem stripped of power in the GATT context. Finally, actors who count somewhat in agricultural policy and very little in foreign economic policy did not seem to have any significance at all in domestic discussions that accompanied the Uruguay Round. This concerns in particular the political parties, the parliament, the trade unions and the electorate.

The question asking participants in the survey to name *the most important, the second most important* and *the third most important actor* confirmed the preponderant role of the OFAEE, cited in nearly two thirds of the cases as the most important actor in the GATT agriculture issue. This result is extraordinary, especially when one considers the limited power that this office usually has in the agricultural policy domain. Conversely, the OFAG is never regarded as the most important actor in the GATT issue. This initial observation is somewhat mitigated, however, if all three choices are examined as a whole: the OFAEE is still by far the actor most in view, but the OFAG, the USP, the Federal Council and the “Vorort” are also considered important actors.

## 2.2 *The collaboration network structure in Switzerland in the context of the agriculture GATT negotiations*

This analysis of the distribution of reputational power only provides a partial picture of the policy network structure. This distribution of power is not accidental, but is tied to the structure of the formal and informal collaboration, exchange and conflict networks, as well as to the position of actors and groups of actors in this structure. As I see it, the more an actor is integrated or central in a network, the more his presence in the process of coordinating interests and working out compromises is indispensable and the greater his influence.

In my survey, the persons questioned were asked to take stock of the actors with whom their organization or office “*collaborated closely in the context of the GATT negotiations on the agriculture issue*”. This classic sociometric question enabled me to construct a binary collaboration matrix comprising 28 actors (see appendix).<sup>21</sup> Among the actors that did not participate in the drafting

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21 I have decided not to symmetrize the collaboration matrix, because the fact that an actor *i* says that he works closely with actor *j*, but not the other way around, constitutes additional information on the nature of the link – if not on the relations of power – between *i* and *j*. I also asked the respondents to indicate the frequency of their collaboration with the actors designated as “close partners”: virtually daily frequency (coded 6), about twice a week (5), once a week (4), twice a month (3), once a month (2) or less than once a month (1), the absence of collaboration being coded as 0. By using this information as a measure of the intensity of the collaboration, I attempted to neutralize the subjectivity associated with the idea of just what “close relations” entail (Scott, 1991, 57). However, the processing of this matrix of link

of the Swiss position during the GATT negotiations on agriculture and that thus do not appear in the collaboration matrix are: the Radical Party, the cantons, the trade unions, the consumer defense groups, the agricultural semi-public organizations and parliamentary bodies. The collaboration matrix was processed with the aid of STRUCTURE (Burt, 1991) and UCINET (Borgati, Everett and Freeman, 1992) software.<sup>22</sup> The network's density is relatively low, given its rather small size: 18% of the possible pairs of actors can reach each other directly, 48% of the pairs of actors can reach each other in two steps.

### 2.2.1 *Analysis of cohesion*

In the strict sense of the term, a clique is defined as a sub-group of actors in which each actor is directly – and uniquely – linked to another actor of the same sub-group (Scott, 1991, 117). Empirically, there are different ways, some more demanding than others, to identify cliques (Burt, 1991, 112).<sup>23</sup> I present here the classification introduced by the STRUCTURE software (Table 3), and I will enhance the analysis according to the results produced by the UCINET software.

The ascendant hierarchical classification in Table 3 groups the actors according to the strength of the links existing between them. The classification at the minimum level of cohesion indicates the existence of two cliques. The first is made up of the Socialist Party (PS) and the Ecologist Party (PES), the Association of Small and Medium-Scale Farmers (VKMB), the Union of Swiss Producers (UPS) and the World Wide Fund for Nature (WWF).

The second group comprises all the other actors involved in the collaboration network. The first big difference (“natural jump”) encountered in the hierarchical classification of cohesion (between 0.050 and 0.250) enables this large clique to be subdivided. One sub-clique is made up of actors indirectly or partially concerned by the agricultural question at the GATT negotiations (Migros, COOP, Denner, VSIG, FIAL, the “Vorort”, USAM). An examination of the

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intensity does not noticeably improve our knowledge of the collaboration network, and sometimes even leads to incoherent results.

- 22 A major difference between these two types of software resides in the measure of the link between two actors. In accordance with the classic approach of sociometric analysis and graph theory, the UCINET software works with so-called “path distances”. The STRUCTURE software is based on Euclidean distances, which measure the *strength* of the relations between two actors.
- 23 As no statistical measure exists for evaluating the pertinence of the cliques identified, it is common practice to categorize the actors according to differences in the degree of cohesion, indicated in the left-hand column, and to check the results obtained against several competing classification methods.

Table 3  
 Analysis of cohesion (according to the strength of the relations) <sup>24</sup>

<i>degree of cohesion</i>	<i>Actors</i>																											
	A	P	U	P	P	V	U	W	A	M	V	C	F	V	U	D	C	O	G	O	S	U	C	F	F	F	U	E
	F	D	D	S	E	K	P	W	F	i	S	O	I	o	S	e	F	F	D	F	G	C	h	S	S	R	S	x
	F	C	C		S	M	S	F	B	g	I	O	A	r	A	n		A	G	A	D	P	V	P	P	V	P	p
					B				r	G	P	L	o	M	n		G	A	E	F	L	D	C	B				e
									o						r	e		T	E	E								r
									s						t	r		T		P								t
																												s
.800	.	.	.	.	.	.	.	.XXX	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.800	.	.	.	.	.	.	.	.XXXXX	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.800	.	.	.	.	.	.	.	.XXXXX	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.XXX	.	.	.	.	.
.750	.	.	.	.	.	.	.	.XXXXX	.	.	.	.	.	.	.	.	.XXX	.	.	.	.	.XXX	.	.	.	.	.	.
.750	.	.	.	.	.	.	.	.XXXXX	.	.	.	.	.	.	.	.	.XXXXX	.	.	.	.	.XXX	.	.	.	.	.	.
.720	.	.	.	.	.	.	.	.XXXXXXXX	.	.	.	.	.	.	.	.	.XXXXX	.	.	.	.	.XXX	.	.	.	.	.	.
.600	.	.	.	.	.	.	.	.XXXXXXXX	.	.	.	.	.	.	.	.	.XXXXX	.XXX	.	.	.	.XXX	.	.	.	.	.	.
.550	.	.	.	.	.	.	.	.XXXXXXXX	.	.	.	.	.	.	.XXX	.XXXXX	.XXX	.	.	.	.	.XXX	.	.	.	.	.	.
.550	.	.	.	.	.	.	.	.XXXXXXXX	.	.	.	.	.	.XXXXX	.XXXXX	.XXX	.	.	.	.	.	.XXX	.	.	.	.	.	.
.500	.	.	.	.	.	.	.	.XXXXXXXX	.	.	.	.	.XXXXX	.XXXXX	.XXX	.	.	.	.	.	.	.XXX	.	.	.XXX	.	.XXX	.XXX
.500	.	.	.	.	.	.	.	.XXXXXXXX	.	.	.	.XXXXX	.XXXXX	.XXX	.	.	.	.	.	.	.	.XXX	.XXX	.XXX	.	.XXX	.XXX	.XXX
.400	.	.	.	.	.	.	.	.XXXXXXXX	.	.	.XXXXXXXXX	.XXXXX	.XXX	.	.	.	.	.	.	.	.	.XXX	.XXX	.XXX	.	.XXX	.XXX	.XXX
.400	.	.	.	.	.	.	.	.XXXXXXXX	.	.XXXXXXXXXX	.XXXXX	.XXX	.	.	.	.	.	.	.	.	.	.XXX	.XXX	.XXX	.	.XXX	.XXX	.XXX
.400	.	.	.	.	.	.	.	.XXXXXXXX	.	.XXXXXXXXXX	.XXXXX	.XXX	.	.	.	.	.	.	.	.	.	.XXXXXXXX	.XXX	.	.XXXXXXXX	.XXX	.	.XXX
.350	.	.	.	.	.	.	.	.XXXXXXXX	.XXXXXXXXXX	.XXXXX	.XXX	.	.	.	.	.	.	.	.	.	.	.XXXXXXXX	.XXX	.	.XXXXXXXX	.XXX	.	.XXX
.320	.	.	.	.	.	.	.	.XXXXXXXX	.XXXXXXXXXX	.XXXXX	.XXX	.	.	.	.	.	.	.	.	.	.	.XXXXXXXX	.XXX	.	.XXXXXXXX	.XXX	.	.XXX
.300	.	.	.	.	.	.	.	.XXXXXXXX	.XXXXXXXXXX	.XXXXX	.XXX	.XXXXXXXXXX	.XXX	.	.	.	.	.	.	.	.	.XXXXXXXX	.XXX	.XXXXXXXXXX	.XXX	.	.XXXXXXXX	.XXX
.250	.	.	.	.	.	.	.	.XXXXXXXX	.XXXXXXXXXX	.XXXXX	.XXX	.XXXXXXXXXX	.XXXXXXXXXX	.	.	.	.	.	.	.	.	.XXXXXXXX	.XXX	.XXXXXXXXXX	.XXXXXXXXXX	.	.XXXXXXXX	.XXX
.250	.	.	.	.	.	.	.	.XXXXXXXX	.XXXXXXXXXX	.XXXXX	.XXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXXXX	.	.	.	.	.	.	.	.XXXXXXXX	.XXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXX	.XXX
.050	.	.	.	.	.	.	.	.XXXXXXXX	.XXXXXXXXXX	.XXXXX	.XXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXXXX	.	.	.	.	.	.	.XXXXXXXX	.XXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXX	.XXX
.050	.	.	.	.	.	.	.	.XXXXXXXX	.XXXXXXXXXX	.XXXXX	.XXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXXXX	.	.	.	.	.	.XXXXXXXX	.XXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXX	.XXX
.050	.	.	.	.	.	.	.	.XXXXXXXX	.XXXXXXXXXX	.XXXXX	.XXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXXXX	.	.	.	.	.XXXXXXXX	.XXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXXXX	.XXXXXXXX	.XXX

collaboration matrix indicates that this sub-clique is based above all on the relations of each actor to the “Vorort”. A second sub-clique consists of public actors, such as the OFAG, the Federal Council, the agricultural working group/ GATT delegation and the OFAEE. Lastly, a third sub-clique groups professional agricultural associations. In this clique, the strong cohesion is based above all on the relations between each of the various sector-based or regional associations and the USP.

Contrary to what this classification might suggest, the USP is not isolated from the other actors of the network; on the contrary, it collaborates closely

24 A cross (X) in the table shows the existence of a link between two actors, at the level of density considered.

with several of them, in particular with the offices of the administration (OFAG and OFAEE), as well as with the “Vorort”: most of the 18 cliques identified by the UCINET software are centred around the triad OFAEE-OFAG-USP, either the three together (5 cliques) or in pairs (3 OFAEE-OFAG cliques, 3 OFAG-USP cliques).

### 2.2.2 Analysis of structural equivalence

The principle of structural equivalence is to summarize a complex network of relations between actors in relations between *positions* of actors, by means of “block models”. The initial operation consists in identifying the positions of equivalence, i. e. to group actors with the same relational profile. The strength of the relations between and within these positions can then be presented in a detailed form (density table) or in a simplified form (block model), which replaces the densities observed by a binary score (0 for the absence of relations, 1 for their presence), according to a certain threshold.<sup>25</sup>

Table 4 shows that the actors who are part of the first “clique” identified in the preceding section also all belong to the same position: The Ecologists and the Socialist Party, the Union of Swiss Producers, the Association of Small and Medium-Scale Farmers and the WWF are not only very tightly linked among themselves, but also have the same relational profile. In reality, the second result flows from the first: their structural equivalence is due to the fact that they collaborate essentially among themselves. If one takes as a threshold a “medium” link, the matrix image shows that the commitment of these actors develops in a closed environment, because no other position “returns” them the collaboration. For this reason, I term them *peripheral* actors. *Secondary non-agricultural* actors are seemingly in an analogous situation: the major distributors (COOP, Migros, Denner), the FIAL, the VSIG and the USAM, which are part of the same clique, are also structurally equivalent. But unlike the case of the *peripheral* actors, the *secondary non-agricultural* actors are not totally isolated: they have a strong tie with the “Vorort”. Now, not only does the latter give them this collaboration, but it itself collaborates with other positions and is in particular closely linked with the *central* position, made up of the OFAEE, the OFAG and the Swiss Union of Farmers (USP). This intermediate status between the *secondary non-agricultural* organizations and the other actors of the network gives the “Vorort” a unique relational profile.

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25 The equivalence analysis was conducted with the help of the STRUCTURE software, which enables the user to undertake classification tests in an interactive fashion and to assess their quality: the coefficient of reliability (correlation) takes the value 1 when the actors have exactly the same structural equivalence position.

Table 4

## Structural equivalence analysis – collaboration network (block model)

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Positions:

<i>“peripherals” (1):</i>	<i>“secondary non-agricultural” (2):</i>	<i>“central” (3):</i>	<i>“marginal” (4):</i>
PES	COOP	OFAG	UDC
WWF	USAM	USP	PDC
VKMB	Denner	OFAEE	AFF
PS	Migros		
UPS	FIAL		
	VSIG		
<i>“secondary agricultural” (5):</i>	<i>“State” (6):</i>	<i>other: Vorort (7)</i> <i>(residual)</i>	
ChVD	Federal Council		
FSPC	GATT working		
FSPB	group/delegation		
FRV	DFEP Office		
UCPL			
Experts			

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Block models

Position		1	2	3	4	5	6	7	Position		1	2	3	4	5	6	7
1		1	1	1	0	0	0	1	1		1	0	1	0	0	0	0
2		0	1	1	0	0	1	1	2		0	0	1	0	0	0	1
3		0	0	1	0	1	1	1	3		0	0	1	0	0	0	0
4		0	0	1	0	1	1	1	4		0	0	1	0	0	0	0
5		0	0	1	0	1	1	1	5		0	0	1	0	0	0	0
6		0	0	1	0	1	1	1	6		0	0	1	0	0	1	0
7		0	1	1	0	0	0	0	7		0	1	1	0	0	0	0

*“medium” link*  
(threshold = general density (0.25))

*“strong” link*  
(threshold = 0.5)

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Already members of the “clique” in the sense that they collaborate closely together, the OFAG, the OFAEE and the USP also have an analogous relational profile, which in this case constitutes an indication of the centrality of this position in the collaboration network. This position is the only one to be closely linked to all the others or, more precisely, to receive the collaboration

of all the others. If one considers a “medium” link, this *central* position reciprocates this collaboration with the *secondary non-agricultural actors* position and the *state actors* position, but this reciprocity no longer applies with a stricter criterion (“strong” link).

### 2.2.3 *Spatial representation of the collaboration network*

The spatial representation of the path distance (number of steps needed by an actor to reach the other actors) constitutes an attempt to convert relational measures into metric measures analogous to physical distance (Scott, 1991, 152). This approach is based on a logic which is somewhat different from that of network analysis, but it allows for a better visualization of the position of actors in the collaboration network. The matrix of path distances, treated as indications of the similarity between pairs of actors, is subjected to multi-dimensional scaling.<sup>26</sup> The graph 1 gives a two-dimensional picture.<sup>27</sup>

The spatial representation of path distances is usually governed by two general principles (Laumann and Knoke, 1987, 229): centrality/periphery and interest differentiation. Under the first of these two principles, the global structure of the network is composed in its centre of the most active actors, who are close to one another (in the sense of collaboration), whereas the periphery is occupied by less marked actors whose commitment in the system is usually limited. The principle of the differentiation of interests is based on the tendency of actors with similar interests to collaborate more closely together than actors whose interests diverge.

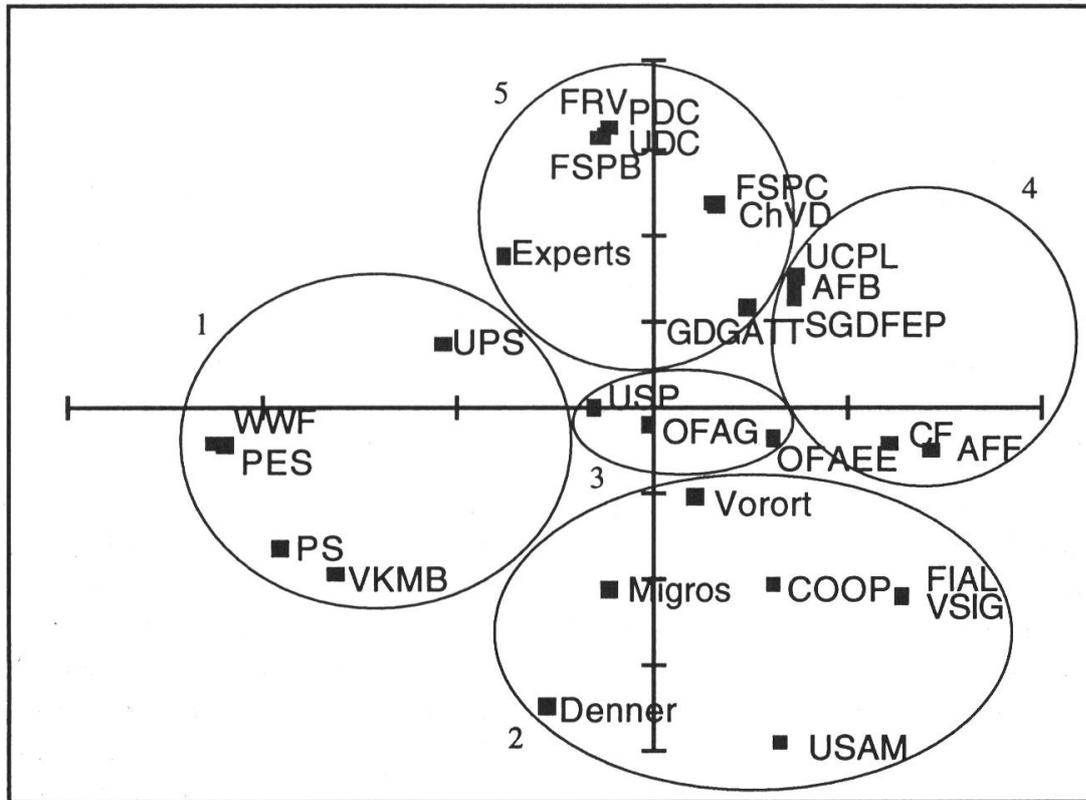
Graph 1 reflects these two principles; it is also coherent with the cohesion and equivalence analyses. The principle of the differentiation of interests is seen above all in groups 1, 2 and 5. Group one is composed of peripheral actors. Group 2, composed of non-agricultural actors, is linked to the central group (group 3, OFAG, OFAEE and USP) by the intermediary of the “Vorort”, which is distinct from, yet still very close to, the heart of the collaboration network. Group 4 consists of other public actors. Lastly, group 5 corresponds to the agricultural secondary actors, with the Central Union of Milk Producers (UCPL) coming closest to the centre.

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26 Graph theory, which places the actors in shared positions according to the path distances, thus takes into account direct and indirect links. As the path distances are ordinal variables, I use a non-metric representation technique (“Smallest Space Analysis”).

27 This representation is from the ALSCAL (“Alternating Least SCALing”) procedure contained in the SPSS software. An identical analysis, made with the help of the UCINET software, which works with the MINISSA algorithm, produces a very similar picture.

Graph 1  
Bi-dimensional representation of the path distances of the  
collaboration network in Switzerland



Kruskal = 0.19<sup>28</sup>

The presence of a centre-periphery can easily be demonstrated by the strong correlation (0.74) existing between the distance that separates the actors from the centre of the space, considered as an indicator of their integration in the network, and their reputational power score. At individual level, the four actors closest to the centre of the collaboration network also belong to the core of the power structure on the GATT issue.<sup>29</sup>

#### 2.2.4 *Power of the actors and position in the collaboration network*

The analysis of the link between the positioning of the actors in the collaboration structure and the power attributed to them can be continued with the help of

28 The Kruskal coefficient measures the quality of the adjustment between the estimations of proximity and the derived Euclidean distances; it takes the value 0 in the case of perfect adjustment

29 It should, however, be noted that certain actors belonging to the core of the power structure remain rather far from the centre of the collaboration network. That is the case, in particular,

various centrality measures (Table 5).<sup>30</sup> These measures serve as indicators of actor power, defined not as an individual feature, but as a feature of the relational system in which the actor has a position that may be more central or less so. The measure of “prestige” explicitly seeks to evaluate the power of actors in the network structure. The underlying idea is that an actor who is the object of relations has something of interest to everyone sending the relations; that interest makes the actor prominent and gives him power (Burt, 1991, 188).<sup>31</sup>

These different measures of centrality are closely correlated in my case study (between 0.61 and 0.95). The correlation is virtually maximal between the measures of local (“degree”) and global (“closeness”) centrality. The fact that the most central actors are so in both a local and global sense means that there is a “structural centre” in the network, i. e. a clique of actors which, like the centre of a circle or a sphere, constitutes the pivot of its organization (Scott, 1991, 93). The high concentration of power in the policy network responsible for the definition of the Swiss agricultural position at the GATT negotiations is thus coupled with a strong centralization of the collaboration. Table 5 shows that this centralization concerns primarily the group of the three actors that belong to the core of the power structure, i. e. the two offices of the administration most directly concerned (OFAG and OFAEE) and the peak agricultural association (USP), to which the “Vorort” should be added.

The USP and the “Vorort” have the most central position in “intermediate” terms; this is consistent with the structural position of a peak organization, which is situated “between” the subordinate actors and the state actors. For the administration, the OFAEE has the most central “intermediate” position. But this finding is not sufficient to assert that its activity within the collaboration network confers upon it more power than on the OFAG. The prestige index shows that the two offices together hold the greatest power, along with the USP.<sup>32</sup>

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for the Federal Council. This result is not really surprising if one considers that the latter only takes occasional action on this subject, leaving day-to-day operations in the hands of the administration together with the private associations concerned.

- 30 Credit must be given to Freeman (1979) for having clarified the significance of the three measures of actor centrality: “degree centrality”, “closeness centrality” and “betweenness centrality”.
- 31 The prestige index developed by Burt (1982, 35, 1991, 190), which constitutes a very elaborate measure of the position of an actor in a network, only takes account of the relations received, which are weighted by the number of votes received by the actors from whom they originate.
- 32 A multiple regression analysis shows that the prestige index is the measure of centrality that best explains reputational power (standardized coefficient of regression of 0.65); the impact of the two other measures of centrality is not significant.

Table 5  
Centrality of actors in the collaboration network in Switzerland

	degree	closeness	"intermediate"	prestige
OFAEE	48.1	61.4	16.6	1.00
OFAG	55.6	67.5	6.7	0.99
USP	55.6	69.2	31.5	0.98
Vorort	33.3	57.4	21.5	0.81
GDGATT	22.2	50.9	3.6	0.76
Federal Council	14.8	45.8	0.6	0.63
UCPL	18.5	49.1	0.0	0.55
SGDFEP	25.9	50.9	1.9	0.44
FSPC	14.8	46.6	1.0	0.43
VSIG	7.4	41.5	0.0	0.43
FIAL	7.4	41.5	0.0	0.43
ChVD	18.5	47.4	1.1	0.41
Experts	11.1	45.8	0.8	0.40
FSPB	3.7	41.5	0.0	0.39
FRV	3.7	41.5	0.0	0.39
AFB	22.2	50.0	0.4	0.36
COOP	11.1	46.6	0.0	0.29
Denner	7.4	40.3	1.1	0.27
WWF	7.4	40.3	1.1	0.27
Migros	18.5	50.9	3.4	0.27
USAM	3.7	37.0	0.0	0.27
VKMB	18.5	42.2	5.9	0.0
UPS	18.5	51.0	4.6	0.0
PDC	3.7	41.5	0.0	0.0
PS	11.1	39.1	0.9	0.0
UDC	18.5	49.1	0.0	0.0
PES	7.4	36.0	0.0	0.0
AFF	7.4	42.9	0.0	0.0

### 2.3 *The exchange network structure*

Having analysed the collaboration network, I shall now turn to an examination of the exchange network structure. The collaboration that develops in a policy network may fulfil various functions, such as the exchange of information, the mobilization of resources, consultation, negotiation or cooperation in policy elaboration and implementation (Van Waarden, 1992, 33). I am interested here in the exchange of resources, support and concessions which, taken together,

provide a better picture of the content of relations among the actors. My goal is to identify the position of actors in this exchange structure, which reflects their ability to make the most of the network and to overcome its constraints.

The members of the elite of the domain question were asked to describe their exchange with the three actors with whom their organization/office collaborated most closely<sup>33</sup> by indicating in each case the extent of the resources, support and concessions their organization/office received and provided: the absence of exchange is 0, and exchange takes a value from 1 to 3, depending on its intensity.<sup>34</sup> These direct measures of exchange were introduced in six matrices: three “supply” matrices (one for resources, the second for support and the third for concessions) and three “receipt” matrices, simultaneously processed by the STRUCTURE software.

According to Schneider (1988, 159), an actor has a strong position of exchange when his social partners depend on his resources, i. e. when he himself receives few resources from his environment but provides a considerable amount to actors who themselves provide a lot to other actors. Schneider measures the exchange position of an actor with the help of an index calculated exclusively on the basis of resources provided by the actors.<sup>35</sup>

In my view, this approach is open to criticism. Firstly, one could just as well argue that an actor who has the strongest position in the network is the one who has succeeded in taking advantage of the exchange opportunities, i. e. the one who receives the most from the exchange network. Secondly, a consideration of the exchanges provided only gives an imperfect image of the exchange structure, because an actor can, for example, be in a “strong” position of sender and recipient simultaneously. As I see it, it would be preferable to take account of two perspectives and to postulate that the position of strength of an actor in an exchange network is more likely to be demonstrated by his ability to provide less than by what he receives in return, i. e. by his ability to maximize

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33 In retrospect, this limitation to three actors, decided for practical reasons (duration of the interview), was not an optimal choice. As a result, it arbitrarily closed the exchange network. But as it turned out, this choice was of little consequence. For one thing, the number of close contacts in this very centralized network is small. For another, I focused primarily on differences in the position of the main actors in this exchange network, and not on the network's overall configuration.

34 The respondents were shown an example that corresponds to the lowest and highest levels of exchange. For the resources: from the exchange of information (1) to the making available of personnel (3); for concessions: from a minor (1) to a painful (3) concession; for support: from the taking into account of advice (1) to the strict compliance with instructions (3).

35 This index is calculated in a manner similar to the prestige index used in the preceding section.

Table 6  
Position of actors in the exchange network<sup>36</sup>

	Receives	Provides	Difference
OFAG	1.00	1.00	.
OFAEE	0.92	0.65	++
USP	0.69	0.94	--
Federal Council	0.50	0.28	++
Vorort	0.38	0.23	+
SGDFEP	0.35	0.27	.
UCPL	0.29	0.36	.
UPS	0.25	0.90	-----
AFB	0.22	0.41	-
Migros	0.22	0.25	.
ChVD	0.22	0.44	--
VKMB	0.21	0.95	-----
COOP	0.21	0.21	.
AFF	0.18	0.10	.
WWF	0.18	0.57	---
GDGATT	0.14	0.10	.
FSC	0.13	0.26	-
FSPB	0.13	0.21	.
FRV	0.06	0.17	-

opportunities (the amount of exchanges that he receives) and minimize the constraints (the amount of exchanges that he provides).<sup>37</sup>

If one looks at the main actors of the network (Table 6),<sup>38</sup> it can be seen that the OFAG is the actor that both receives and provides the most resources, support and concessions. The USP has an unfavourable position in this structure,

36 In order not to disrupt the calculation of the index, I focus on the actors (19 in number) who had exchanges with at least three other actors.

37 This is supported by the fact that I am not only measuring the exchange of resources, but also of support and concessions. It is difficult to see how the granting of large concessions is a reflection of a strong exchange position.

38 The case of the UPS, the VKMB and the WWF illustrates the limits of an approach that only takes into consideration the position resulting from the resources/support/concessions granted: in this particular case, the three actors would have had to be regarded as having a "strong" exchange position. But not only were they marginal in the policy network that decided the elaboration of the Swiss agricultural position during the GATT negotiations – which implies that the exchanges they provided were of scant importance for the actors benefiting from them – they also received little for them in return. That being the case, their position in the exchange structure is very "weak".

in that it provides noticeably more than it receives. This finding suggests that the USP was having difficulty obtaining the support desired in the domestic negotiation process. Conversely, one should note the more advantageous position of the OFAEE, the Federal Council and, to a lesser extent, of the “Vorort”, which all receive more from this exchange network than they give.

#### 2.4 *The opposing interests structure*

A domestic confrontation over the GATT agriculture policy was inevitable between the actors in the agricultural sphere, threatened by the prospect of an international liberalization, and the actors from the sphere of the economy who are open to the world and in favour of greater exchanges, even if concessions needed to be made in the agricultural domain. The general density of the symmetrized network of conflicting interests of the 28 actors of the network is 30%.<sup>39</sup> This seems rather high, because it means that nearly one third of all possible conflict of interest pairs are present in this network. An equivalence analysis sheds light on the structure of these conflicts (Table 7).

The position *agricultural interests* (USP, UCPL and UPS) is at the centre of the opposition structure in that its interests are opposed to those of all other positions except one, including at the “high” level of conflict. As is to be expected, the strongest clash of interests, from the point of view of both the composition of the positions and the conflict level, is between the *agricultural interests* and the *free-market* actors, who are outward looking or relaying external pressures (OFAEE, GATT delegation/working group, the “Vorort”).

The other position defending *agricultural interests* (UDC, PDC, FSPC) is also strongly opposed to the *free-market* actors, but it is made up of marginal actors in the network. The case of *mixed secondary actors* is difficult to assess: for one thing, the composition of this position is very heterogeneous; for another, these actors concede few “differences of opinion”, which is not unrelated to the fact that they are peripheral in the system for the most part; lastly, their opposition to the actors of the position *agricultural interests* and in particular to the USP is probably motivated by diametrically opposed reasons, depending on the actors: excessive defence of agricultural interests in the opinion of some, and an insufficient defence in the opinion of others. Finally,

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39 The empirical difficulties raised by research on conflicts of interests are amplified in Switzerland, where it contradicts the predominant principles of the political system – integration of opposing viewpoints, concertation, search for compromise (Kriesi, 1980, 361). For that reason, I have decided to address the question in a more indirect manner, by asking the respondents to “name the actors with which their organization/office has *differences of opinion* with regard to the position adopted by Switzerland on the agricultural question during the GATT negotiations”.

Table 7  
Equivalence analysis of conflicts of interests

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Positions:

<i>secondary agriculture (1)</i>	<i>agriculture (2)</i>	<i>free market proponents (3)</i>	<i>mixed- secondary (4)</i>	<i>State (5)</i>
UDC	UPS	OFAEE	USAM	AFF
PDC	USP	GDGATT	Expert	Federal Council
FSPC	UCPL	Vorort	PS AFB SGDFEP VSIG FIAL WWF FSPB ChVD	

Residual: OFAG, PES, Migros, VKMB, FRV, Coop, Denner

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Block model<sup>40</sup>

Position		1	2	3	4	5		Position		1	2	3	4	5
1		0	0	1	0	0		1		0	0	1	0	0
2		0	0	1	1	1		2		0	0	1	0	0
3		1	1	0	0	0		3		1	1	0	0	0
4		0	1	0	0	0		4		0	1	0	0	0
5		0	1	0	0	0		5		0	1	0	0	0
“medium” level of conflict (threshold = general density (0.23))								“high” level of conflict (threshold = 0.5)						

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I should note that the OFAG has a unique “oppositional profile”. An examination of the matrix of opposing interests shows that the OFAG is in opposition with both the actors defending agricultural interests and with the actors who are closest to the theories of the free-market proponents, which reflects the contradictory pressures to which this office was subjected.

<sup>40</sup> The presence of a “1” in a square of these matrix images indicates the existence of a difference of opinion between the two positions concerned.

### 3. Theoretical interpretation of the network

The structural morphology of the network responsible for the elaboration of the Swiss position at the agricultural negotiations of the Uruguay Round, identified in the preceding section, manifests most of the traits of the “concertation” type model (Kriesi, 1994, 395), i. e. the encounter between a system of well-developed (corporatist) interests and a strong State. Consisting of very few actors in both cases, this network has an average density of relations, is highly concentrated, centralized and closed and has a considerable interlocking of public (OFAEE, OFAG) and private (USP and “Vorort”) actors in the core of the political network and symmetry in their relations.

The change from a political network of the “sector-based cooperation” type, which was common in domestic agricultural policy, to a “concertation” type model is the product of pressures that arose out of the GATT negotiations. More particularly, this must be seen as the impact of a shift in issues from the national to the international scene and an increasing interdependence of interests between agriculture and the sector of the economy open to the outside world. Whereas the result of the first phenomenon was to put the State actors in general, and the OFAEE in particular, in a position of strength and to weaken the private agricultural actors, the second development helped strengthen the commitment of the part of the economy open to the exterior, represented by the “Vorort”.<sup>41</sup> Owing to the globalization of issues and the key role of the question of agriculture in bringing the entire Round to a successful close, the discussions between domestic actors had a global scope and were no longer confined to a single sector, as in the case of sector-based cooperation.<sup>42</sup>

This configuration of power prevailed in the formal and informal policy network responsible for elaborating the Swiss agricultural position during the GATT negotiations until late summer 1990. Although significant, this evolution of the policy network was not sufficient to enable the necessary innovations to be introduced. During the first four years of the Round, the Swiss political system was unable to respond to the requirements of the GATT negotiations (Sciarini, 1994, 256–267). Switzerland took refuge in a position that was primarily defensive, reflecting the configuration of power identified in this

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41 The “Vorort” is no longer solely concerned by virtue of the fact that its members are active in agricultural policy, but also, more fundamentally, as the peak organization of commerce and industry.

42 My empirical case is different from the theoretical model of the “concertation” network presented in the first section in that there are no trade unions present. However, it is well known that the agricultural sector is a special case in which there are very few members of trade unions.

article: despite their retreat with regard to the situation that commonly prevailed in the domain of agricultural policy, the private agricultural actors – the USP and also the UCPL – and their public proponent, the OFAG, remained central to the collaboration and power structure. The agricultural sector still had veto power. It adopted a very rigid position in the domestic negotiating bodies, such as the Piot Commission (Sciarini, 1994, 268–285), and was opposed to any concessions, thereby preventing the Swiss negotiators from putting forward constructive proposals.

My empirical survey, however, was conducted just before the Swiss offer was submitted in October 1990, preceding what was expected to be the last phase of the Uruguay Round. It was in this period that a second change occurred in the configuration of power. Taking advantage of international pressure, the State authorities, starting with the Federal Council, which finally took a stand in the debate, had more control over the degree of openness of the network. They used the situation to skirt the agricultural veto when the GATT offer was being drafted. The result of this strategy was to transform the “concertation” type network temporarily into an “intervention” type network, i. e. a combination of a strong State and a system of weak interest groups. In my case study, the change in the configuration of power to the benefit of the State actors and the private actors favourable to a liberalization of agriculture was clearly a condition for the introduction of an innovation and its spread throughout the entire network. In the international domain, the strategy of the State actors was the precondition for the submission to the GATT negotiations of the Swiss offer which, although modest, put Switzerland on the path to liberalization. On the domestic scene, this commitment marked the beginning of the reform of the Swiss agricultural policy.

This result is not entirely incompatible with my structural analysis: the undesirable position of the USP in the exchange structure was a sign that this organization would encounter difficulties in making itself heard in the process of domestic negotiations. Weakened by external pressures, the agricultural sector, and above all the USP, were gradually compelled to “learn” and to accept the reform of Swiss agricultural policy<sup>43</sup> that is presently being carried out.

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43 The old definition put forward by Deutsch (1963, 111) reminds us that power can in a certain sense be considered to be the ability to afford not to learn.

## Conclusion

Unlike the main current in political science, in this article I chose a generic and neutral definition of policy networks. In order to describe the structure of the network responsible for elaborating the Swiss agricultural policy during the GATT negotiations, I have made use of the tools of network analysis. This approach enabled me to identify the main traits of the network, as well as the position and power of the public and private actors. That way, I was able to focus attention on the veto power that the representatives of agricultural interests still had during the first four years of the negotiations, despite a retreat from the past position. More generally, the image of the network in the formal analysis did not suffer from the comparison with the negotiation process. In other words, in the present case the network analysis has proved to be a reliable modelling tool.

In this conclusion, I shall discuss briefly the contributions and limits of network analysis for assessing the elaboration and implementation of public policies, as well as the possibilities of future development. In my view, the criticism levelled against network analysis by political scientists is due either to a failure to recognize the possibilities offered by this method<sup>44</sup> or, on the contrary, to exaggerated expectations. In the former case, network analysis is sometimes criticized for producing results that could also be obtained by qualitative descriptive analyses. Dowding (1995, 156) even argues that “the paradox of formal [network] analysis is that it must yield results which by and large fit with what we know by descriptive methods”. This viewpoint not only denies the heuristic value of the approach and the possibility of obtaining counter-intuitive results, but it also overestimates the ability of a researcher to master the complexity of a network of a certain size and the classifications that emerge from it. The modelling made possible by network analysis is, as I see it, an invaluable asset in this regard. The same applies to the opportunity offered of shifting at any time from the level of network observation to that of the relations between the actors, the group of actors and the individual actors themselves. Other researchers (in particular Mutti, 1989, 70) maintain that network analysis is confined to the explanation of the form of the social or political exchange and says nothing about the content of the exchange. In my view, this argument underestimates the possibility offered by network analysis to approximate the content of the exchange by superimposing various exchange networks (information, support, concessions etc.).

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44 Deciding whether structural analysis deserves the status of theory that certain claim for it is another issue, which I will not address here.

As concerns the second area of criticism, it seems self-evident that structural analysis alone cannot explain the outcome of a decision-making process. In this article, I proceeded upon the assumption that the identification of the structural configuration of a policy network helps anticipate with some accuracy the decisions that may be adopted by the network concerned.<sup>45</sup> But it must be borne in mind that the decisions adopted by a network are not, in my view, determined by its structure alone. The strategies brought into play by the actors and the institutional mechanisms in which the latter act are also of decisive importance. Thus, a qualitative analysis of the decision-making process constitutes an indispensable addition to the formal and static analysis of the network structure. The researcher who uses network analysis is constantly forced to return to a qualitative analysis and to mobilize his ethnographic knowledge of the terrain in order to interpret the results of an analysis of cliques or equivalence (Lazega, 1994, 296). This complementarity between formal analysis of the networks and qualitative analysis of political processes (or of other types of analysis of the formation of decision-making) constitutes an additional and particularly attractive analytical asset.

#### APPENDIX: ABBREVIATIONS AND NAMES

AFB	Administration fédérale des blés (Federal Administration of Wheat)
AFF	Administration fédérale des finances (Federal Administration of Finance)
CF	Conseil fédéral (Federal Council – Swiss government)
ChVD	Chambre vaudoise de l'agriculture (Chamber of Agriculture of the canton of Vaud)
COOP	(chain of supermarkets and department stores)
Denner	(chain of supermarkets)
Experts	
FIAL	Fédération de l'industrie alimentaire (Federation of the Food Industry)
FRV	Fédération romande des vignerons (Federation of Vine Growers of French-speaking Switzerland)
FSPB	Fédération suisse des producteurs de bétail (Swiss Federation of Livestock Producers)
FSPC	Fédération suisse des producteurs de céréales (Swiss Federation of Grain Producers)
GDGATT	Délégation suisse auprès du GATT (Swiss delegation to the GATT negotiations)
Migros	(chain of supermarkets and department stores)

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45 The main weakness of existing classifications, including the one used in this article, is that they are based on the structural preconditions of the network (the attributes of the actors) and not directly on the characteristics of the network itself. Even though this article shows that such classifications still remain useful for interpreting configurations described with the help of the tools of structural analysis, the modelling of policy networks types in a logic closer to that of network analysis constitutes another promising path of development.

OFAEE	Office fédéral des affaires économiques extérieures (Federal Office of Foreign Economic Affairs)
OFAG	Office fédéral de l'agriculture (Federal Office of Agriculture)
PDC	Parti démocrate chrétien (Christian Democrat Party)
PES	Parti écologiste (Ecologist Party)
PS	Parti socialiste (Socialist Party)
SGDFEP	Secrétariat général du Département fédéral de l'Economie publique (Office of the Federal Department of the Public Economy)
UCPL	Union centrale des producteurs de lait (Central Union of Milk Producers)
UDC	Union démocratique du centre (Democratic Union of the Centre)
UPS	Union des producteurs suisses (Union of Swiss Producers)
USAM	Union suisse des arts et métiers (Swiss Association of Small Businesses)
USP	Union suisse des paysans (Swiss Union of Farmers)
VKMB	Association pour la protection des petits et moyens paysans (Association for the Defence of Small and Medium-Scale Farmers)
Vorort	Union suisse du commerce et de l'industrie (Swiss Union of Commerce and Industry)
VSIG	Union du commerce d'importation et du commerce de gros (Import and Wholesale Trade Union)
WWF	World Wide Fund for Nature

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*Author's Address:*

Pascal Sciarini,  
Département de science politique, Université de Genève,  
102 Bd. Carl-Vogt, 1211 Genève 4

